Department of Education
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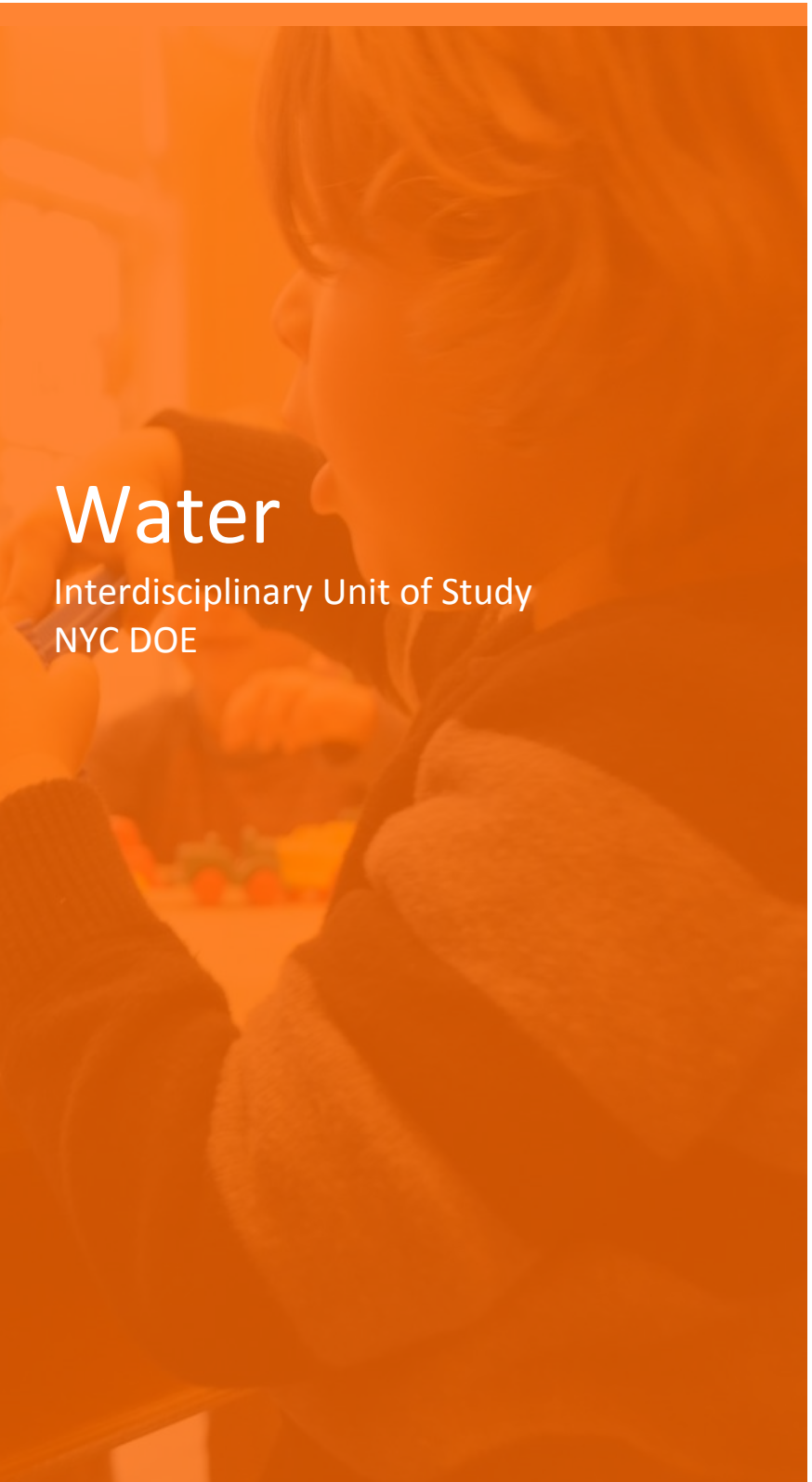
PRE-K FOR ALL

Water: EXPLORE
Interdisciplinary Unit of Study
NYC DOE



Water

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Unit Topic: Water

Essential Question:

What does water do?

Focus Questions:

Where can we find water?

What happens to water when it changes temperature?

What happens when we put things in water?

How does water help us?

Student Outcomes:

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

Enduring Understandings:

- Water is all around us.
- Water changes depending on how warm or cold it is.
- Some things float in water and some sink.
- Some things change when you put them in water.
- All living things need water.

Connected Academic Vocabulary:

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

•absorb •beach •boat •boil •captain •conclude •condensation •clean •cloud •deep •dissolve •diver •drenched •drink •environment •evaporate •faucet •ferry •float •form •fountain •freeze •gas •hail •hydrate •ice •island •lake •liquid •melt •meteorologist •mist •observe •ocean •perspiration •pond •precipitation •predict •puddle •quench •rain •repel •river •sailor •saturate •sea •shallow •sink

•sleet •snow •soak •sponge •solid •state •storm •stream •swamp •sweat •swim •temperature •thirst •umbrella •vapor •wash •water •water cycle •waterproof •weather

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

Domain 2: Physical Development and Health:
PDH.2 Uses sensory information to plan and carry out movements.
PDH.8 Demonstrates awareness and understanding of healthy habits.

Domain 4: Communication, Language and Literacy:
Reading Standards for Literature
CLL.7 With prompting and support, students will engage in a picture walk to make connections between self, illustrations, and the story.

Reading Standards for Informational Text
CLL.2 With prompting and support, retell detail(s) in a text.

Writing Standards
CLL.3 With prompting and support, use a combination of drawing, dictating, or writing to narrate a single event and provide a reaction to what -- happened.

Speaking and Listening Standards
CLL.1 With guidance and support, participate in collaborative conversations with diverse partners about pre-kindergarten topics and texts with peers and adults in small and large groups.

Language Standards
CLL1 Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.

Domain 5: Cognition and Knowledge of the World
Mathematics
PK.CKW.6 (Counting and Cardinality): Identify “first” and “last” related to order or position.

Science
PK.CKW.4 Observes and describes characteristics of earth and space.
PK.CKW.6 Acquires knowledge about the physical properties of the world.

Social Studies
PK.CKW.3 Demonstrates knowledge of the relationship between people, places and regions.

The Arts
PK.CKW.7 Expresses what he/she knows, thinks, feels and believes through dance and creative movement.

II. Introduction

Welcome to **Unit 7: Water**, Pre-K for All's seventh Interdisciplinary Unit of Study. In **Unit 7: Water**, children move from thinking critically about light, darkness and shadows to an exploration of the properties and uses of water. This unit, like all Pre-K for All units, provides opportunities for children to observe objects and phenomena in their environment with increasing complexity. Activities throughout the unit prompt children to learn about water through hands-on explorations and provide opportunities to observe water in their immediate environment. As you prepare to teach this unit, consider how water is a part of your children's daily lives. Additionally, as the weather changes according to the season, use these changes to observe, draw, paint and discuss rain, snow, puddles, storms, etc. You may adjust your daily plan according to the weather, for example by reading Thunder Cake by Patricia Polacco on a day that is stormy. Through this responsive and intentional planning and practice you are implementing **Program Quality Standards (PQS) Seven**, **Curriculum Planning Cycle**, and **Eight**, **Engaging Children in Meaningful Activity**.

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 Water unit, children begin by considering where we can find water. Children will observe, discuss and explore water in their classrooms and throughout their environment such as bodies of water and weather. In the second week, children will focus on changes in water temperature. They will explore and observe ice and water at different temperatures and perform experiments with water and ice. In the third week, children will think about how objects are affected when they are placed in water. This will lead them to think critically about why some items float and some sink. There are also opportunities in this week to learn about substances that dissolve or expand in water (like salt and sponges). In the final week of the unit, children will have learning experiences and do activities that encourage them to think about how water helps living things. This is a great time to revisit the classroom job chart and add in a "gardener" who can water classroom plants.
Through these explorations you are making science content and scientific thinking accessible and meaningful to children. You are building on their curiosity and excitement about science and laying the foundation for continued scientific inquiry in Kindergarten and beyond. For additional information on scientific thinking and exploration of water, see Section VIII: Supporting Resources.

Your water table will be a focal point in this unit. If a water table is not available, or if you would like to provide additional opportunities for children to explore water, you can use buckets or other containers of water. You may also want to create a water wall using recycled materials and containers to enhance children's exploration of water. See Section XI: Appendices for more information and ideas on how to create a water wall with recycled and/or easily attainable materials and Section VII: Sample Student Work for some pictures of a water wall.

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 water through informational texts. They will explore new vocabulary words such as "hydrate" and "condensation" to continue to develop their language skills as they engage in scientific explorations and thinking. In **Unit 6: Light**, there were opportunities to focus on different kinds of lines and notice

how they form shapes and letters. In this unit, we encourage you to help children not only recognize and explore the shapes of letters, but also learn about the sounds they make. As they are ready, children are encouraged to identify and match various letters and sounds through games such as Alphabet Soup. Begin with letters that are familiar to the children, such as the letters in their names, and letters that arise throughout the unit, such as "w." Remember that children will be in different stages of understanding and using letters and their sounds. Continue to use your authentic assessment data as you determine how best to support each student in your class.

III. Unit Framework

Unit Topic	Water
Essential Question This is a child-friendly question that connects the knowledge and skills that children should develop throughout the unit.	• What does water do?
Enduring Understandings These are the big ideas that children should remember throughout their educational careers and extend beyond the unit topic.	• Water is all around us. • Water changes depending on how warm or cold it is. • Some things float in water and some sink. • Some things change when you put them in water. • All living things need water.

	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.	Where can we find water?	What happens to water when it changes temperature?	What happens when we put things in water?	How does water help us?

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 39 for lesson plan.	Water and Ice: Discuss water and ice with the children. What do they know about water? What do they know about ice? What do they know about the relationship between water and ice? After discussing the relationship between water and ice, provide ice for the children to explore. Ask about melting and what happens when ice melts. Ask children to think of ways to melt the ice and facilitate a discussion among the group about how to melt ice. Try the children's suggestions if possible. Verbally recap their thoughts and observations at the conclusion of the activity. *PK.CLL.1 (Speaking and Listening Standards): With guidance and support, participate in collaborative conversations with diverse partners about pre-kindergarten topics and texts with peers and adults in small and large groups.* See page 42 for lesson plan.	Sink vs. Float Experiment: Ask children what the words *sink* and *float* mean. Provide an assortment of objects that sink as well as some that float and invite children to place the objects in a tub of water and observe what happens. Before testing each object, children can predict and record whether they think each one will sink or float and then compare the results to their predictions. *PK.CKW.2 (Science): Tests predictions through exploration and experimentation.* See page 46 for lesson plan.	Stems and Water: Supply a container of colored water. Add a leafy celery stalk to the water. Ask children to predict what will happen if you leave the stem in the water overnight. Record their predictions and invite them to monitor the stems periodically. As the colored water becomes visible in the celery stalk or leaves, talk with the children about how the stem transports the water. Refer back to their predictions the following day to summarize and draw conclusions. Tell children that water helps move nutrients throughout a plant. This helps the plant to stay alive. Without water plants will start to wilt and eventually die. *PK.CKW.1 (Science): Asks questions and makes predictions based on observations and manipulation of things and events in the environment.* See page 50 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. 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.*	Water Dance by Thomas Locker	Rain! by Linda Ashman Snow by Uri Shulevitz	Float by Daniel Miyares	Water Can Be… by Laura Purdie Salas
	Rich, informative and literary texts provide opportunities for learning, expression, imagination and critical thinking that are enhanced through multiple readings of the same book. Reading books multiple times helps all children solidify their thinking about content areas and builds their confidence as learners and as future readers. When you have a rich text that truly 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: • 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. • Pause throughout the book and ask children to share a new word or idea they heard. • 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. • Preview or review texts or parts of texts 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.			
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.	beach, cloud, deep, environment, faucet, fountain, hail, lake, mist, ocean, pond, puddle, rain, river, sea, shallow, sleet, snow, storm, stream, swamp, vapor, water, water cycle, weather	boil, conclude, condensation, evaporate, form, freeze, gas, ice, liquid, melt, meteorologist, observe, precipitation, predict, solid, state	absorb, boat, captain, dissolve, diver, drenched, ferry, float, island, repel, sailor, saturate, sink, soak, sponge, swim, temperature, umbrella, waterproof	hydrate, clean, drink, perspiration, quench, sweat, thirst, wash
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	Invite children to create a paper boat with their families. Send home directions for folding a paper boat (see Section XI: Appendices). Families can create the boat at home,	Invite families to determine if they can see their breath on the way to or from pre-K. They can keep a tally throughout the week and compare the numbers over the weekend. Provide basic	Invite families to try a "sink and float" experiment. They can gather an assortment of small items, predict which items will sink and which will float and test their theories by placing each	Ask families to consider whether there is water in the foods and beverages they eat and drink. If they cook together they can consider each ingredient in the recipes they prepare.

the classroom. Each activity is aligned to the PQS.	draw themselves in the boat and send it back to school. Children can try floating their boats in the water table. Children who do not make a boat with their families can make a boat in the classroom with a teacher. Alternatively, children could look for somewhere near their home to try to float their boats or try this at home in the bathtub or sink. *Two-Way Communication*	background information for families on condensation and why it is possible to see your breath on some days but not others. See Section XI: Appendices for background information. *Primary Teacher*	item in a container of water. *Primary Teacher*	*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.	Take a walking field trip to a nearby water source (pond, river, fountain, etc.). If the weather permits, have lunch or a snack by the water as the class observes and discusses the water. OR Create a class water wall (see Section XI: Appendices for directions). Invite children to bring empty, clean recycled containers from home to incorporate into the wall. Children can discuss where to add each piece and then play with the wall during Center Time. OR Create a class book about water. Ask each child what s/he has learned about water and add this to a picture of him/her exploring water during this study.			

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. The study of *Water* revolves around scientific concepts and explorations. In this unit 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 increasingly complex content. As you play with children in the various centers, encourage them to use their senses to observe the materials around them and then use their observations to make predictions about what might happen if they manipulate the materials. Provide scaffolds for the children as they test their predictions and provide assistance in drawing and communicating conclusions when needed. Refer to the *critical thinking questions* for each center to help guide these interactions.

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.

Your water table will be a focal point in this unit. If a water table is not available, or you would like to provide additional opportunities for children to explore water, you can use buckets or other containers of water. Be sure to change the water in the table daily and as needed throughout the day, and have children wash their hands before and after using the water table. Monitor this area throughout Center Time to watch for spills and be sure to clean up to prevent slipping. Additionally, you may want to create a water wall using recycled materials and containers to enhance children's exploration of water. See Section XI: Appendices for guidance and pictures.

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? • Ice Castles: Add pictures of ice castles to the Blocks/Construction Center. Invite children to refer to these pictures and build their own ice castles. Consider covering the blocks with white paper and adding clear plastic cups for children to use in their structures. *PK.AL.1 Actively and confidently engages in play as a means of exploration and learning.* • Winter Landscape: Cut out snowflakes from white pieces of paper and hang them from the ceiling. Add cotton balls to the Blocks/Construction Center for children to add to their structures to create a winter scene. *PK.CKW.4 (Science): Observes and describes characteristics of earth and space.* • Boats: Post some pictures of bodies of water on the wall, including some local bodies of water such as the Hudson River, Atlantic Ocean, etc., as well as an assortment of boats. Pretend the center is a river, lake or ocean, and invite children to create their own boats. *PK.CKW.3 (Social Studies): Demonstrates knowledge of the relationship between people, places and regions.* **√ Opportunity for Assessment** What nearby bodies of water is the child familiar with? What can s/he share about them?	• 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___? • Rain Gear: Add raincoats, hats, boots, and other waterproof clothing to the dramatic play area. Invite children to pretend they are playing in the rain. *PK.CKW.4 (Science): Observes and describes characteristics of earth and space.* **√ Opportunity for Assessment** What does the child know about changes in weather? What weather related vocabulary does the child use as s/he pretends to play in the rain? • Beach: Add to your Dramatic Play center by incorporating materials to make a beach. Create a place for children to pretend they are playing in the sand and an area for them to pretend to swim and play in the water. Add beach chairs, towels, toys for building sand castles and playing in the water, and a picnic basket or cooler of pretend food so children can pretend to spend a day at the beach. *PK.CKW.5 (The Arts): Participates in a variety of dramatic play activities to represent fantasy and real life experiences.* • Boats: Add large cardboard boxes big enough for children to sit in and invite them to pretend they are boats. *PK.CKW.5 (The Arts): Participates in a variety of dramatic play activities to represent fantasy and real life experiences.*

• Car Wash: Invite children to build car washes out of blocks. Add car wash signs as well as small cars and invite children to pretend they are washing the cars. Discuss the role water plays in cleaning cars. *PK.CLL.2 (Approaches to Communication): Demonstrates he/she is building background knowledge.* • Bridges: Add pictures of bridges, especially local bridges, to the center. Discuss how bridges are helpful and encourage children to try to build bridges. *PK. AL.2 Actively engages in problem solving.* • Tunnels: Supply empty, clean cardboard tubes such as paper towel, toilet paper and wrapping paper tubes. Invite children to pretend the tubes are tunnels and to use them as they build. *PK.AL.1 Actively and confidently engages in play as a means of exploration and learning.* • Build a Letter: Invite children to use blocks to make letters out of blocks, starting with the letters that are most relevant to them. Talk about the sounds that the letters make and words that start with the letters. Continue with other letters that the children suggest. *PK.CLL.2 Demonstrate an emerging understanding of spoken words, syllables and sounds (phonemes).* • Suggested Text: What Floats In A Moat? By Lynne Berry. Invite children to build the castle that is inside the moat.	• Laundromat: Add to your Dramatic Play center by incorporating materials to make a laundromat. Use cardboard boxes to create washers and dryers; add clothing, empty bottles of detergent and pretend money for children to use at the laundromat. Invite them to do the laundry and talk about the role water plays in cleaning clothes. *PK.CKW.5 (The Arts): Participates in a variety of dramatic play activities to represent fantasy and real life experiences.* • Meteorologist: Invite children to pretend to give the weather forecast. Provide clothing for children to use to pretend they are meteorologists on TV, a large map, pictures of various types of weather, and weather charts for children to read. Invite children to look for *W*s and other letters on the maps; help them read the weather maps and ask them questions about what they see. *PK. CLL.2 (Reading Standards for Informational Text): With prompting and support, retell detail(s) in a text.* • Suggested Text: Cloudy with a Chance of Meatballs by Judi Barrett. Invite children to create pictures of food and add them to their meteorologist play.
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? • Markers and Water: Invite children to use markers to create a picture. After they have finished with the markers, provide spray bottles of water and invite children to lightly spray their papers. After they have sprayed their papers, encourage them to watch how the water causes the colors to drip and discuss how their pictures have changed. *PK.CKW.6 (Science): Acquires knowledge about the physical properties of the world.*	**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? • Absorption: Provide an assortment of materials, some absorbent and some that will not absorb water (e.g., cotton ball, paper towel, penny, spoon), as well as a dish of water and eye droppers or pipettes. Invite children to place a few drops of water onto each item and note whether the item absorbs water. Provide a chart for children to record the results.

- Paint on Ice: Make large pieces of ice by freezing a shallow layer of water in a cookie sheet. Remove the ice from the container and invite children to paint on the ice with watercolors. Discuss what will happen when you put the ice in the freezer and why the ice becomes water again after it is out of the freezer and the children begin to paint on it.
  PK.CKW.4 (Science): Observes and describes characteristics of earth and space.
- Letter Prints: Create letter stamps using a sponge or similar material. Provide paint and invite children to create letter art. As the children work, talk with them about the sounds the letters make.
  PK.CLL.2 (Reading Standards: Foundational Skills): Demonstrate an emerging understanding of spoken words, syllables and sounds (phonemes).
- Ice Cube Painting: Make colored ice cubes out of water and food coloring. Insert a Popsicle stick into the water as it freezes to create a handle for children to hold while painting. Children can then use the colored ice paint. Before they begin painting, ask them to predict how the paints will work and what will happen as they use them.
  PK.CKW.1 (Science): Asks questions and makes predictions based on observations and manipulation of things and events in the environment.
- Crayons and Watercolors: Invite children to draw a picture with crayons. Children may want to draw an underwater or rainy day scene. After their drawings are complete, provide watercolor paints and invite children to use large paintbrushes and lightly paint over their crayon drawings. Discuss the changes to the picture as children add the watercolor paint.
  PK.CKW.6 (Science): Acquires knowledge about the physical properties of the world.
- Snowflakes: Provide white paper and scissors. Model folding the paper and cutting carefully then unfolding to reveal a snowflake. Discuss the relationship between snowflakes and water with the children as they do this activity.
  PK.CKW.4 (Science): Observes and describes characteristics of earth and space.
  PK.CKW.6 (Science): Acquires knowledge about the physical properties of the world.
- Does it Dissolve? Test how well different substances (e.g., sugar, salt flour, oil, rice, etc.) dissolve in water by placing them in containers (one substance per container) and adding water. Before adding the water, ask the children to predict what will happen and record their results. Refer back to their predictions and summarize the results at the conclusion of the activity.
  PK.CKW.6 (Science): Acquires knowledge about the physical properties of the world.
- Land or Water: Provide an assortment of small animal and sea creature toys (e.g., dog, cow, fish, shark, etc.). Invite children to sort the toys into two categories: those that live in water and those that live on land. Use a blue piece of paper as a base for the water animals and green for land.
  PK.CKW.5 (Science): Observes and describes characteristics of living things.
- Bodies of Water: Provide clay, playdough or other type of dough and invite children to make a landscape in a tray with the dough. When the landscape is complete, invite children to pour water over it, noting where water pools and creates bodies of water. Add small toy people, boats, etc., for children to use in their landscapes.
  PK.CKW.3 (Social Studies): Demonstrates knowledge of the relationship between people, places and regions.
- Water Cycle: Draw the sun and clouds on the outside of a small sealable plastic bag. Fill 1/6 of the bag with water and seal. Hang in the window. Invite the children to predict what will happen. Let the bag hang for several days and observe. The water should evaporate into vapor then change back into a liquid as it cools, forming drops inside the bag.
  PK.CKW.4 (Science): Observes and describes characteristics of earth and space.

√ Opportunity for Assessment

What does the child understand about the properties and characteristics of water? What does s/he understand about the states of water (solid, liquid, gas)?

• Liquid Watercolors: Cover a table with paper. Provide liquid watercolor in various colors as well as small pipettes. Invite children to use the pipettes to drip water onto the paper and observe what happens when the liquid hits the paper. *PK.CKW.6 (Science): Acquires knowledge about the physical properties of the world.* • Waterfalls: Place pictures of waterfalls near the easel. Cover the easel with a large sheet of paper. Provide various shades of blue, grey and white paint as well as pipettes and basters. Invite children to hold a pipette full of paint at the top of the easel, point it down and gently squeeze to release the paint onto the paper. The paint will slowly flow down the paper and create a waterfall effect. Children can also explore color mixing as the paint mixes on the easel. *PK.CKW.3 (Social Studies): Demonstrates knowledge of the relationship between people, places and regions.* **√ Opportunity for Assessment** Is the child able to create a representation of a waterfall? What details does s/he notice in the waterfall pictures and include in his/her own work? • Suggested Text: <u>It Looked Like Spilt Milk</u> by Charles Shaw. Invite children to pretend a blue piece of blue paper is a cloud. Invite them to fold it in half, add a dab of white paint, fold the paper closed again then press and open. What do they see? Use dictation to add their thoughts.	• Crystals: Add sugar, Epsom salt or table salt to water and mix until the sugar or salt is dissolved. Pour the mixture into small dishes and then add a drop of food coloring to the dish. Place the containers in an area where they are unlikely to spill and let them sit for two to three days. The water will evaporate over time, leaving visible crystals of the sugar or salt in the container. Show the crystals to the children and invite them to share their thoughts on how the crystals formed and what happened to the water. *PK.CLL.1 (Speaking and Listening Standards): With guidance and support, participate in collaborative conversations with diverse partners about pre-kindergarten topics and texts with peers and adults in small and large groups.* • Which Holds More? Supply two containers, one that is tall and thin and one that is short and wide. Ask children which container will hold more water. Fill the container the children think will hold more, then pour it into the container the children think will hold less. Discuss the results. *PK.CKW.2 (Science): Tests predictions through exploration and experimentation.* • Salt and Ice: Supply salt and ice. Pour the salt onto the ice; observe and discuss what happens. Children could also use pipettes to squirt salt water onto the ice. Make connections to how and why workers add salt to streets in the city during the winter. *PK.CKW.1 (Science): Asks questions and makes predictions based on observations and manipulation of things and events in the environment.* • Shape of Water: Provide an assortment of containers and small pitchers of water. Invite children to pour the water into the containers. Engage children in a discussion about the shape of water and how they might make water change its shape. *PK.CLL.1 (Speaking and Listening Standards): With guidance and support, participate in collaborative conversations with diverse partners about pre-kindergarten topics and texts with peers and adults in small and large groups.*

	• Suggested Text: A Drop of Water: A Book of Science and Wonder by Walter Wick. With the children, try some of the experiments listed in the back of the book.
Toys and Games/Math Manipulatives • 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. • Fish for a Number: Provide small magnetic numbers, a magnetic wand or a pretend fishing pole with a magnetic end, and a set of dot cards. Invite children to draw a card from the set of cards, determine the number of dots on the card and then fish for that number. *PK.CKW.2 (Counting and Cardinality): Represent a number of objects with a written numeral 0 – 5 (with 0 representing a count of no objects).* • Letters: Provide an assortment of small toy letters and tongs. Invite children to use the tongs to pick up letters, discuss the sounds they make and/or search for the letters in their names. *PK.PDH.5 Demonstrates eye-hand coordination and dexterity needed to manipulate objects.* • Seashell Sort: Supply an assortment of shells as well as containers for sorting. Alternatively, add a set of number cards and have children match the correct number of shells to each number card. *PK.CKW.1 (Science): Asks questions and makes predictions based on observations and manipulation of things and events in the environment.* • Fish: Add small plastic fish or other water animal manipulatives to the Manipulatives Center for the children to explore. *PK.AL.1 Actively and confidently engages in play as a means of exploration and learning.* • Drops on a Penny: Provide a penny, a pipette and a container of water. Invite children to see how many drops of water they can fit on the penny. Encourage children to count each drop of water as it is placed on the penny and share how many drops there are on the penny throughout the activity.	**Sand and Water/Sensory** *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. • Water Play: Throughout the unit, vary the items in the water table. Observe how the children are using the materials to ensure that there are neither too many nor too few items for them to work with. Consider a combination of funnels, colanders, buckets, plastic containers, pipettes, various sponges, ladles, whisks, basters and pumps from hand soap containers. *PK.AL.1 Actively and confidently engages in play as a means of exploration and learning.* • Sand and Water: Fill the table with dry sand. Provide spray bottles filled with water and invite children to explore the changes in the appearance and texture of the sand as they squirt water on it. Remember to leave the lid off the table at the end of the day so the sand can dry. *PK.CKW.3 (Science): Generates explanations and communicates conclusions regarding experiments and explorations.* • Baby Bath: Add child-friendly soap to the water in the sensory table as well as baby dolls and washcloths. Invite children to bathe the babies and talk about how people use water to stay clean. *PK.CLL.1 (Speaking and Listening Standards): With guidance and support, participate in collaborative conversations with diverse partners about pre-kindergarten topics and texts with peers and adults in small and large groups.* • ABCs: Add a few small toy letters to the water in the sensory table and invite children to explore. Call attention to how the letters looks and feel in addition to the sounds that they make.

PK.CKW.3 (Counting and Cardinality): Understand the relationship between numbers and quantities to 10; connect counting to cardinality. **√ Opportunity for Assessment** Does the child say the number names in order and pair one number with each drop of water? Does s/he understand that the last number name said tells the number of drops counted? • Drops of Water: Provide a small dish of water, pipettes and Lego blocks. Invite children to try to place a drop of water on each of the raised circles on the Lego blocks. *PK.PDH.5 Demonstrates eye-hand coordination and dexterity needed to manipulate objects.* • Suggested Text: Swimmy by Leo Lionni. Provide small toy fish for children to play with and explore.	*PK.CLL.2 Demonstrate an emerging understanding of spoken words, syllables and sounds (phonemes).* • Wash the Dishes: Add child-friendly soap to the water in the sensory table as well as plastic dishes and washcloths. Invite children to wash the dishes and talk about how water helps to keep things clean. *PK.CKW.3 (Science): Generates explanations and communicates conclusions regarding experiments and explorations.* • Sailboats and Wind: Add small sailboats to the water in the sensory table. Ask children to put the boats in a line and discuss which one is first and which is last. Invite them to use straws to blow wind at the sails and watch the boats move around the table. *PK.CKW.6 (Counting and Cardinality): Identify* "first" and "last" related to order or position. • Life in the Pond: Turn the sensory table into a pond. Add water, rocks, sand, sticks, small plants, toy fish, frogs, toads, etc., and invite children to play in the pond. *PK.CKW.5 (Science): Observes and describes characteristics of living things.* • Ocean Life: Turn the sensory table into an ocean. Add water, sand, small plants, pieces of coral (if available) and shells as well as toy fish, sea creatures, etc. Invite children to play in the ocean. *PK.CKW.5 (Science): Observes and describes characteristics of living things.* • Laundromat: Add child-safe soap to the water in the sensory table as well as doll clothes and invite children to wash the clothes. Hang a clothesline near the table and provide clothespins for the children to hang the clothes on to dry. Engage the children in discussions about how people use water to keep things clean and talk about where the items of clothing are on the clothesline. Which item is first? Last? What happens if you add another piece of clothing? *PK.CKW.6 (Counting and Cardinality): Identify* "first" and "last" related to order or position. • Explore Ice: Add ice cubes to the sensory table. Invite children to explore the ice.

	PK.CKW.4 (Science): Observes and describes characteristics of earth and space. • Frozen Toys: Freeze various small toys in ice cubes. Place the cubes in the sensory table. Ask children how to get the toys out of the ice. Encourage them to test their hypotheses. *PK.CKW.2 (Science): Tests predictions through exploration and experimentation.* • Pipes: If available, add plastic tubing and/or plastic pipes to water in sensory table. *PK.AL.4 Exhibits curiosity, interest, and willingness in learning new things and having new experiences.* • Suggested Text: 10 Little Rubber Ducks by Eric Carle. Add ten toy ducks to the water in the sensory table and invite children to retell this story.
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 books from the Supporting Text List in Section V for children to access and independently explore texts related to the study. • Author Study: Place several of Robert Kalan's water-related books (e.g. Blue Sea, Rain, Jump Frog Jump!) in a basket in the library. Share that the same person wrote the words for all of these books; they all have the same author. Invite children to take a picture walk through the books. What do they notice in the pictures? Which book do they like best? Why? *PK.CLL.7 (Reading Standards for Literature): With prompting and support, students will engage in a picture walk to make connections between self, illustrations, and the story.* **√ Opportunity for Assessment** What connections can the child make between themselves and the illustrations or story? • Thunder Cake: Read Thunder Cake by Patricia Polacco with children in the library, then talk with them about what they do with their families	**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? • Snow Dough: Make snow dough and invite children to play with the dough and pretend they are playing in the snow. Children could also use the dough to create letters and numbers. See Section XI: Appendices for a recipe. *PK.CKW.4 (Science): Observes and describes characteristics of earth and space.* • Pre and Post Water: Invite children to use their senses to explore pasta and/or rice pre- and post-soaking or cooking in water. Discuss how water changes the pasta/rice. *PK.CKW.1 (Science): Asks questions and makes predictions based on observations and manipulation of things and events in the environment.* • Water Taste Test: Invite children to taste several different types of water such as tap, soda, seltzer and distilled. Chart their preferences and discuss the role of water in staying healthy. *PK.PDH.8 Demonstrates awareness and understanding of healthy habits.*

when the weather is bad. Also consider asking families to discuss and write what they do together in bad weather and return their written responses to school for a classroom book or display.
PK.CLL.1 (Speaking and Listening Standards): With guidance and support, participate in collaborative conversations with diverse partners about pre-kindergarten topics and texts with peers and adults in small and large groups.

- Itsy Bitsy Spider: Write out the words to this song on large chart paper and display in the library. Place a couple of toy spiders in a basket near the chart; invite children to read the words and use the spiders to act out the song. Point out some of the letters on the chart and discuss the sounds that they make.
  PK.CLL.5 (Reading Standards for Literature): Students interact with a variety of common types of texts.

√ Opportunity for Assessment
What does the child understand about how water helps to keep his/her body healthy?

- Bubbles: Make homemade bubbles with the children (see Section XI: Appendices for directions). Write out the recipe on chart paper for children to follow throughout the process. Before making the bubbles, invite children to try to blow bubbles with plain water and a bubble wand. As you make the bubbles, talk about what you are adding to the water. When the bubble mix is complete use it to blow bubbles outside.
  PK.CKW.6 (Science): Acquires knowledge about the physical properties of the world.

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.

- Where Do We Find Water? Enter this question into a search engine and join the children in observing the images that are displayed. Ask them which ones they have seen before and which ones they have never seen.
  PK.CKW.5 (Technology): Uses the knowledge of technology to increase learning.
- Snowflakes: Look up images of snowflakes with the children. If possible, allow them to select an image to print. Invite them to look at the lines in

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 ___?
- Collect Rain: Place a container such as a measuring cup or small pitcher outside on a rainy day to collect rain. When the rain has stopped measure how much water is in the container. Record the results. Repeat this activity whenever it rains. After you have collected rain water on several occasions, compare the results to determine when it rained the most and the least.
  PK.CKW.2 (Measurement and Data): Sort objects and count the numbers of objects in each category (limit category counts to be less than or equal to 10).

the snowflakes and discuss the types and names of lines. Then bring the pictures to the Writing Center so other children can observe the lines as well. *PK.CLL.5 Demonstrates a growing receptive vocabulary.* • How Does Water Move? Ask children this question or another thought-provoking question about water. Provide time for them to think before asking them to share their answers. When children are ready to share, they should sit by an adult at the computer so the adult can use typed dictation to record responses and children can observe the adult typing. Accept all responses. Display the responses, and, later, invite the children to explore this concept in the water table. Be sure to include basters, pipettes, and empty, clean hand soap containers with pumps to the water table to enhance this exploration. *PK.CKW.4 (Technology): Understands the operation of technology systems.* • Islands: Search for images of aerial views of Manhattan, Long Island, Staten Island, Roosevelt Island and other local islands. Talk with children about the relationship between water and islands as well as the islands in the New York City area. *PK.CKW.3 (Social Studies): Demonstrates knowledge of the relationship between people, places and regions.* • Rain: Invite children to use the computer to listen to the sounds of rain. *PK.PDH.1 Uses senses to assist and guide learning.* **√ Opportunity for Assessment** After listening, how does the child describe the sounds of rain?	• Puddle Jump: Create puddles out of paper with the children. Add a letter, number, number of dots or shape to the puddles. Ask children to jump on a letter, number or shape puddle. *PK.PDH.2 Uses sensory information to plan and carry out movements.* • Fish, Fish, Shark: Play *Duck, Duck, Goose*, replacing the words with *fish* and *shark.* *PK.PDH.2 Uses sensory information to plan and carry out movements.* • Icicle Hunt: Invite children to hunt for icicles and count how many they find. Note that children should not try to collect the icicles. *PK.CKW.1 (Counting and Cardinality): Count to 20.* • Wet Chalk: Soak several pieces of sidewalk chalk in water. Invite children to write or draw with the wet chalk as well as dry chalk and compare and contrast the way each piece of chalk writes. If children write letters use the opportunity to discuss the sounds that each letter makes. *PK.AL.4 Exhibits curiosity, interest, and willingness in learning new things and having new experiences.* • Bubbles: Invite children to blow bubbles with the bubble solution you created in the Cooking and Mixing center. Talk with the children about what the bubbles do and how they look. *PK.PDH.1 Uses senses to assist and guide learning.* • Suggested Text: Little Bird Takes A Bath by Marisabina Russo. When there are puddles on the ground invite children to search for their perfect puddle.

Writing

- Critical thinking questions/statements: I notice that you ___; that reminds me of ___. What if you try ___?
- Alphabet Soup: Provide a pot of water and small plastic letters. Invite children to add letters and stir to create a soup. They can also create a recipe by writing down the letters they add to the pot.
  PK.CLL.1 (Reading Standards: Foundational Skills): Demonstrate understanding of the organization and basic features of print.
- Lines in Snowflakes: Provide pictures of snowflakes or the pictures of snowflakes that children printed at the computer and invite them to look at the lines in the snowflakes. What types of lines do they see?
  PK.CLL.6 (Approaches to Communication): Demonstrates a growing expressive vocabulary.
- Where Do We Find Water? Invite children to think about this question, then draw or write their answers on an index card or small piece of paper. Display the answers.
  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.
- Letter Ice: Supply ice cubes and let children use them to create letters. Provide pictures of letters for them to reference as they work. Talk about the sounds that the letters make.
  PK.CLL.2 Demonstrate an emerging understanding of spoken words, syllables and sounds (phonemes).
- What Happens When…? Ask a question about what happens when you try different things with water, such as "What happens when you put a sponge in water?" or "What happens when you tip over a cup of water?" Ask children to think about the answer, then write it down (with words or pictures) on a piece of paper. At a later group time, show the children what happens when you try these different actions and help them reflect on their answers.
  PK.CLL.2 (Writing Standards): With prompting and support, use a combination of drawing, dictating, or writing to compose

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?
- Share a Puddle: Place a hula hoop on the floor and ask children to pretend it is a puddle. Play music and invite a small group of children to walk around the puddle. When the music stops, have the children stop walking around the hula hoop puddle and jump into it.
  PK.PDH.2 Uses sensory information to plan and carry out movements.
- Water Xylophone: Create a water xylophone. Fill small glass jars with various amounts of water. Invite children to gently tap the sides of the jar with a spoon and listen to the different tones produced.
  PK.CKW.3 (The Arts): Expresses oneself by engaging in musical activities.
- Melt: Invite children to consider what they would look like if they were melting and try to act this out. Play music and invite them to dance as though they were melting as they dance. Some children can be the audience while others dance. Invite children to alternate roles.
  PK.CKW.7 (The Arts): Expresses what he/she knows, thinks, feels and believes through dance and creative movement.
- Snowflake Waltz: Play Tchaikovsky's "Snowflake Waltz" for the children and invite them to listen to the music.
  PK.CKW.3 (The Arts): Expresses oneself by engaging in musical activities.
- Snowflakes: Invite children to consider what their bodies would look like if they were falling snowflakes. Play music and invite them to dance like snowflakes. Some children can be the audience while others dance. Invite children to alternate roles.
  PK.CKW.7 (The Arts): Expresses what he/she knows, thinks, feels and believes through dance and creative movement.
- Freeze Dance: Invite the children to play freeze dance. They dance when music is playing but must stop and "freeze" (hold their bodies very still) when the music stops.
  PK.PDH.4 Combines a sequence of large motor skills with and without the use of equipment.

informative/explanatory texts in which they name what they are writing about and supply some information about the topic. • Invisible Names: Invite children to write their names with a white crayon on white paper. Then add a layer of watercolor paint over their writing. While it will be challenging to see the white writing on white paper, it will be easy to read each child's name after the paint has been applied. *PK.CLL.1* (*Language Standards): Demonstrate command of the conventions of standard English grammar and usage when writing or speaking.* • Stuck in the Rain: Invite children to draw, dictate or write a narrative of a time they were got caught in the rain or snow and how they felt about the experience. *CLL.3 (Writing Standards): With prompting and support, use a combination of drawing, dictating, or writing to narrate a single event and provide a reaction to what happened.* • Suggested Text: Stone Soup by Heather Forest. Invite children to discuss what they would put in their own stone soup, then supply paper for them to record their recipes.	• Water Dance: Play music that evokes thoughts of water such as Ravel's "Jeux d'eau" or Handel's "Water Music." Invite children to listen to the music and respond by dancing to show how the music makes them feel. *PK.CKW.7 (The Arts): Expresses what s/he knows, thinks, feels and believes through dance and creative movement.* **√ Opportunity for Assessment** What does the child do with his/her body while dancing? • Water Music: Introduce instruments such as rain sticks and wood blocks and encourage children to make the sounds of a rainstorm, waterfall, ocean waves or other water-related sounds. *PK.CKW.3 (The Arts): Expresses oneself by engaging in musical activities.* • Suggested Text: Listen to the Rain by Bill Martin. Invite children to make their own rain sounds.

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.*

*10 Little Rubber Ducks by Eric Carle: Ten little rubber ducks float around the world.
All The Water In The World by George Ella Lyon: Where does water come from? Where does it go?
Anna Carries Water by Olive Senior: Anna fetches water from the spring every day but can't carry it in the same way her older brothers and sisters can.
Blizzard by John Rocco: From the excitement of the first snowflake to the relief upon seeing the first snowplow a boy watches the big storm.
Boats Float! by George Ella Lyon and Benn Lyon: Set sail into the world of boats.
Change It!: Solids, Liquids, Gases and You (Primary Physical Science) by Adrienne Mason: Explore the physics of matter.
Cloudy with a Chance of Meatballs by Judi Barrett: The tiny town of Chewandswallow was very much like any other tiny town except for its weather which came three times a day, at breakfast, lunch and dinner.
Come on Rain! by Karen Hesse: Experience a summer downpour after a sweltering summer heat wave.
A Cool Drink of Water by Barbara Kerley: Discover how people around the world get water.
Curious George Rides a Bike by H.A. Rey: George helps a little boy with his paper route and gets into all sorts of trouble.
Does It Sink or Float? by Susan Hughes: Investigate the differences between objects that sink and objects that float.
Down Comes the Rain (Let's-Read-and-Find-Out Science 2) by Franklyn M. Branley: Find out all of the ups and downpours of the water cycle.
Down, Down, Down: A Journey to the Bottom of the Sea by Steve Jenkins: A top to bottom look at the ocean.
A Drop of Water: A Book of Science and Wonder by Walter Wick: Evaporation, condensation, capillary action, and surface tension are explained through simple text and illustrated by pictures that reveal water in its many awesome transformations.

Follow the Water from Brook to Ocean (Let's-Read-and-Find-Out Science 2) by Arthur Dorros: Water shapes the earth and it is important to keep our water clean.
It Looked Like Spilt Milk by Charles Shaw: Is it a rabbit, a bird, or just spilt milk?
It's Raining! by Gail Gibbons: What makes rain? From drizzle to downpour, here's information on the different kinds of rain and how to prepare if a storm is approaching.
Listen to the Rain by Bill Martin: Listen to the rain, the whisper of the rain…
Little Bird Takes a Bath by Marisabina Russo: A little bird in the big city searches for the perfect puddle.
National Geographic Little Kids First Big Book of the Ocean (National Geographic Little Kids First Big Books) by Catherine D. Hughes: An animal reference that includes the sea's high-interest animals and introduces kids to some of its lesser-known creatures.
Rain by Robert Kalan: Take a trip through the countryside, where rain falls on the green grass, the black road, the red car and the purple flowers.
*The Rainbow Fish by Marcus Pfister: A fish finds friendship and happiness when he learns to share.
Raindrops Roll by April Pulley Sayre: Discover the wonder of water.
Save Water Every Day by Mari Schuh: An introduction to the concept of recycling and why it is beneficial for our Earth.
Snow is Falling by Franklyn Branley: What does snow do?
The Snowflake: A Water Cycle Story by Neil Waldman: The journey of a single drop of water throughout the year.
*The Snowy Day by Ezra Jack Keats: The adventures of a little boy in the city on a very snowy day.
Snowflake Bentley by Jacqueline Briggs Martin: From the time he was a small boy in Vermont, Wilson Bentley saw snowflakes as small miracles.
Splish! Splash!: A Book About Rain (Amazing Science: Weather) by Josepha Sherman: While investigating rain, learn about the water cycle and problems with rain, including droughts and floods.
Stone Soup by Heather Forest: If each person makes a small contribution the result can be huge.
*Swimmy by Leo Lionni: A little black fish in a school of red fish figures out a way of protecting them all from their natural enemies.
Things that Float and Things that Don't by David A. Adler: It can be surprising which objects float and which don't.
Thunder Cake by Patricia Polacco: Grandma consoles her frightened granddaughter by telling her that the dark clouds of the impending storm are nothing more than the ingredients for a Thunder Cake.
Water by Daniel Nunn: Explore the concept of water and why living things need it.
Water Cycle (Nature's Patterns) by Monica Hughes: What is the water cycle?
Water Is Water by Miranda Paul: Drip. Sip. Pour me a cup. Water is water unless...
*Water Rolls, Water Rises by Pat Mora: Visit one of fourteen different water landscapes and cultural areas around the world.
Water Up, Down and All Around (Amazing Science) by Natalie Rosinsky: Describes the water cycle and the importance of water.
What Floats in a Moat? by Lynne Berry: Archie the Goat has a delivery to make. He has several barrels of buttermilk that the queen needs, but in order to get them to her, he needs to cross the moat.

What Is a Gas? by Jennifer Boothroyd: An introduction to a single state of matter: a gas.
What Is a Liquid? by Jennifer Boothroyd: A simple explanation of matter, a description of liquids, and examples of how liquids can change into different states of matter.
What Is a Solid? by Jennifer Boothroyd: A simple explanation of matter, a description of solids, and examples of how solids can change into different states of matter.
Who Sank the Boat? by Pamela Allen: Do you know who sank the boat?
When Rain Falls by Melissa Stewart: We go inside when the rain comes down, but where do animals go?

VI. Sample Weekly Plan

UNIT TITLE: Water
WEEK ONE

Essential Question: What is water, how do we use it and where do we find it?
Focus Question: Where can we find water?
Focus Vocabulary: beach, cloud, faucet, hail, ice, lake, mist, ocean, pond, puddle, rain, river, snow, storm stream, swamp, vapor, water, water cycle

	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 could 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	Where Can We Find Water? Cut out a drop of water from blue	Class Storm: Invite children to help you make the sounds of a	Foundational Text Picture Walk: Introduce the book Water Dance	Foundational Text Read Aloud: Water Dance by Thomas Locker.	Ice Cube Count: Slowly drop ice cubes into a hard container such as

(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.)	paper for each child in the class and give one to each child. Ask the children to walk around the classroom and put their drop on something that has water. Discuss children's responses, then move the discussion on to include places outside of the classroom, especially those in the area, where there is water. Create a list of children's ideas and add to the list throughout the week. *PK.SED.6 Understands and follows routines and rules.*	storm. Suggest elements of a storm (e.g., rain, thunder, etc.) as well as actions to demonstrate each element such as tapping fingers on the ground lightly, then faster and harder, then gradually slowing down when the storm is over. *PK.CKW.4 (Science): Observes and describes characteristics of earth and space.* Teacher tip: This is a good activity to repeat during transitions, adding variations such as using feet instead of tapping with hands.	by Thomas Locker by showing children the pictures and asking them what they see and what they think the book is about. *PK.CLL.7 (Reading Standards for Literature): With prompting and support, students will engage in a picture walk to make connections between self, illustrations, and the story.*	See page 39 for lesson plan and Section IX for Inquiry and Critical Thinking Questions	a metal bowl. Hide your hands so the children cannot see them as you drop the cubes into the bowl. Encourage the children to listen and count how many ice cubes you drop. *PK.CKW.3 (Counting and cardinality): Understand the relationship between numbers and quantities to 10; connect counting to cardinality.*
BB Math Meeting *See Teacher's Edition for Math Meeting Activities*					
Foundational Text	Water Dance by Thomas Locker				
Supporting Text	All The Water In the World by George Ella Lyon	Listen to the Rain by Bill Martin	Water Cycle (Nature's Patterns) by Monica Hughes	A Cool Drink of Water by Barbara Kerley	Water Is Water by Miranda Paul
Small Groups	LITERACY SMALL GROUP: Initial Sounds.	MATH SMALL GROUP:	SMALL GROUP #3:	MATH SMALL GROUP:	Catch up day: Use this as an opportunity to

Implement at least one of the two weekly Building Blocks small group activities and one of the other activities listed here as well. *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	Sing the song, *Willoughby Wallaby Woo*, highlighting the /w/ sound as well as the initial sounds in each child's name. Invite the children to choose a letter and work with their group to see how many words they can generate that start with that letter. Write down the words and enunciate the initial sound in each word. Allow children who are ready for a challenge to create their own list of words that start with a letter of their choosing. This is an opportunity for children to explore and play with letters. Be mindful of where children are in developing these early literacy skills and accept all work. *PK.CLL.2 (Reading Standards: Foundational Skills): Demonstrate an emerging*	See your Building Blocks Teacher's Edition for the weekly Small Group Activity. Group 1: Group 2: Group 3: Group 4: Group 5:	Make Rain. Pour a couple of inches of hot water into a glass jar. Tell children the glass is very hot and be sure they do not touch. Place a paper bowl or plate on top of the jar. Add ice cubes to the bowl. Observe. Raindrops should form and fall into the water. Discuss with the children what happened and help them consider why the raindrops formed. *PK.CKW.4 (Science): Observes and describes characteristics of earth and space.* Group 1: Group 2: Group 3: Group 4:	See your Building Blocks Teacher's Edition for the weekly Small Group Activity. Group 1: Group 2: Group 3: Group 4: Group 5:	complete small groups with children you may have missed throughout the week. Children to work with today (initials):

time engaging with children in the interest areas.	*understanding of spoken words, syllables and sounds (phonemes).* Group 1: Group 2: Group 3: Group 4: Group 5:		Group 5:		
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	Talk with children about the water available to them at lunch. Discuss how the water looks, tastes, makes them feel and why it is important to drink water. *PK.PDH.8 Demonstrates awareness and understanding of healthy habits.* Note, per the NYC Food Standards, all programs are required to offer water at meals and snack times.				
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 that were produced throughout this unit. Note the alignment to standards and relationship to the overarching question, enduring understandings, and unit subtopics. Some examples may fit under more than one standard, essential understanding, and/or focus question.

Example 1: Water Wall
Activity Type: Culminating Experience
PKFCC Standard: *PK.CKW.6 (Science) Acquires knowledge about the physical properties of the world.*

"Look! If I move my cup really quickly after I put the water in I can catch it when it comes out!"

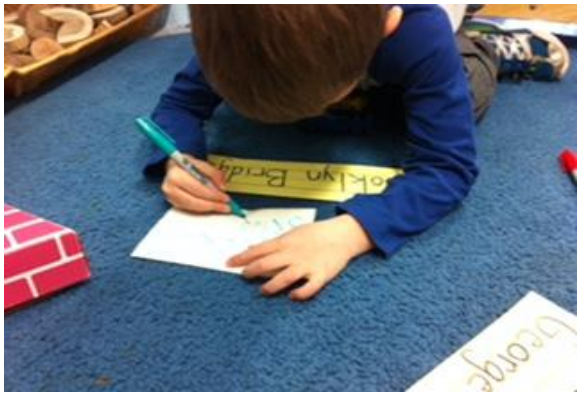
"The water is going to squirt in my face!"

"Oh wait, no it's not. It has to go this way. The straw has to go down."

"The water is coming out down here!"

Example 2: Bridges
Activity Type: Center Time
Focus question: What happens when we put things in water?
PKFCC Standard: *PK.AL.2 Actively engages in problem solving.*

"If cars go in water they can't drive so they need bridges."



"The George Washington one is by us."

VIII. Supporting Resources

Teacher Texts

Exploring Water with Young Children by Ingrid Chalufour and Karen Worth

Promoting Children's Science Inquiry and Learning Through Water Investigations by Cindy Hoisington, Ingrid Chalufour, Jeff Winokur and Nancy Clark-Chiarelli http://www.naeyc.org/yc/files/yc/file/201409/YC0914_Promoting_Science_Inquiry_Hoisington.pdf

Worms, Shadows and Whirlpools: Science in the Early Childhood Classroom by Karen Worth

Teacher Websites

Brooklyn Children's Museum
http://www.brooklynkids.org/
Clean Water Clear Choice
http://www.cleanwaterways.org/kids/fun_facts.html
NY Aquarium
http://nyaquarium.com/
Staten Island Children's Museum
http://sichildrensmuseum.org/
Waterwise
http://www.waterwise.org.uk/pages/fun-facts.html
Why Take the Lid off the Water Table?
http://www.naeyc.org/content/why-take-lid-water-table

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
Baby Beluga
Cleano
Down by the Bay

I Had a Little Turtle
It's Raining it's Pouring
Jack and Jill
Rub-a-dub-dub Three Men in a Tub
There's a Hole in my Bucket
Three Little FIshies

Songs with Lyrics

Row, Row, Row Your Boat
Row, row, row your boat,
Gently down the stream.
Merrily, merrily, merrily, merrily
Life is but a dream.

Water, Water
Water, water, keeps us clean (pretend to wash body)
Washes our clothes (tug on clothing) in the washing machine
Water, water, quenches my thirst (pretend to drink from a cup)
And fills the balloons I like to burst! (throwing motion)
Water, water, fun for swimming (swimming motion)
Feeds the grass that always needs trimming
Water, water, fun for play (big smile)
But keeps us inside on a rainy day (frown).

Rain, rain, go away
Come again another day
Little _____ wants to play (fill in the blank with a child's name).

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.

Water Dance by Thomas Locker

PK.CKW.4 (Science): Observes and describes characteristics of earth and space.

Level 1: Recall

- Where does the rain fall from?
- What is high above the earth in the blue sky?
- What is still and deep and overflows?
- What is a waterfall?

Level 2: Skill/Concept

- What are all of the things described in this book (rain, stream, waterfall, etc.) made of?
- This book says that clouds can look like many different shapes in the sky. Are there clouds in the sky today? What shapes do you see in the clouds?

Level 3: Strategic Thinking

- The storm in this book made the sky dark. How do storms and clouds make the sky dark?
- This book shows many different places in the environment where we can find water. Where are some places in our classroom where we can find water?

Level 4: Extended Thinking

- At the beginning of the book it says, "Some people say that I am one thing. Others say that I am many." How can something be one thing and many things at the same time?
- Compare the pictures to what we see when we go outside. What is the same? What is different?
- How do you think water gets to our classroom?

Rain! by Linda Ashman

PK.SED.2 Regulates his/her responses to needs, feelings and events.

Level 1: Recall

- What does the boy wear outside in the rain?
- What does the boy order at the Rain or Shine Café?
- What does the man order at the Rain or Shine Café?
- What does the man forget at the café?

Level 2: Skill/Concept

- How does the boy feel about the rain? How do you know?
- How does the man feel about the rain at the beginning of the story? How do you know?
- How does the man feel about the rain at the end of the story? How do you know?
- How did the boy help the man change his mind about the rain?

Level 3: Strategic Thinking

- How do you feel about going outside in the rain? Why?
- At the beginning of the story the man is very upset. What are some things that make you upset?
- The boy in the story is very happy. What are some things that make you happy?

Level 4: Extended Thinking

- If you don't have a rain coat, hat or umbrella to wear outside in the rain, what can you do if you want to stay dry?
- The boy made the man feel better. When someone is upset what can you do to make him/her feel better?

Snow by Uri Shulevitz

PK.CKW.4 (Science): Observes and describes characteristics of earth and space.

Level 1: Recall

- How did the city look before it started to snow?
- How did the city look when it was covered in snow?
- What does the man with the hat say about the snow?
- What does the woman with the umbrella say about the snow?

Level 2: Skill/Concept

- Do you think the boy with the dog wanted it to snow? How do you know?
- The radio and television said, "No snow." The book says the snowflakes don't listen to the radio. What does that mean?

- The boy in this book is wearing a hat and scarf and the other people are wearing big jackets. Why?

Level 3: Strategic Thinking

- When if first started to snow, the snowflakes melted. Why?
- When it started to snow more, the book says the rooftops got lighter. How did the snow make the rooftops lighter?
- How did the people in the book feel when there was a lot of snow? How do you know?

Level 4: Extended thinking

- Does it snow when it is warm outside? Why or why not?
- When does snow melt?
- What will happen to the snow when it melts?
- How will the city look when the snow melts?

Float by Daniel Miyares

PK.CLL.3 (Reading Standards for Literature): With prompting and support, ask and answer questions about characters and major events in a story.

Level 1: Recall

- What did the boy make out of newspaper?
- What did the boy play with outside in the rain?
- How did the boy's boat get into the river?

Level 2: Skill/Concept

- The boy put his boat in puddles outside. Where did the puddles come from?
- Why did the boy have to chase his boat?

Level 3: Strategic Thinking

- How did the boy feel when his boat got wrecked in the river? How do you know?
- How can you find out if something floats in water?
- Why do some things float but some things do not?

Level 4: Extended Thinking

- Why do you think this book is called Float?
- The boy's boat floated in the puddles but when it went in the river it fell apart. Why?
- What are some things that float?

Water Can Be by Laura Purdie Salas

PK.CKW.4 (Science): Observes and describes characteristics of earth and space.

Level 1: Recall

- What are three things water can do?
- What did the boy put on his bruised knees?

Level 2: Skill/Concept

- Who else drinks water besides people?
- How does water help gardens?
- How does water help animals?

Level 3: Strategic Thinking

- The book says water can be a “drink cooler.” How can water cool drinks?
- The book says water can be a “home maker.” How can water be a home?
- How can water be a “snowman former?”

Level 4: Extended Thinking

- What are some things people do with water other than drink it?
- How does water help you?

X: Lesson Plans: Foundational Learning Experiences

Lesson Title: Water Dance by Thomas Locker

Lesson Type: Read Aloud

Unit of Study: Water	**Unit Focus Question:** Where can we find water?
Objective: Children will begin to understand that water can be found in many different places in the environment.	
PKFCC Focus Standard: *PK.CKW.4 (Science): Observes and describes characteristics of earth and space.* **Additional PKFCC Standards:** *PK.CLL.1 (Reading Standards for Informational Text): With prompting and support, ask and answer questions about details in a text.*	**Link to Authentic Assessment Systems** WSS: IV.D.2 Explores rocks, water, soil, and sand. TSG: 7. Demonstrates knowledge of Earth's environment COR: BB. Observing and classifying
Materials: • Water Dance by Thomas Locker	**Connected Academic Vocabulary:** environment, lake, mist, rain, river, sea, storm, water, weather
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:** Summarize the lesson by asking children to restate a few places where there is water. Ask any additional questions from Section IX as applicable.	
Assessment: Does the child understand that water can be found in many different places in the environment? How do you know?	
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 create their own books about where people find water in the city.
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 vocabulary with children by pointing at the pictures while using vocabulary before the lesson.
Teacher Tip: • This book highlights many places in the environment where water can be found. Help children consider water in the city. Where is it found? Where does it come from?
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: Water Dance by Thomas Locker

PKFCC Focus Standard: *PK.CKW.4 (Science): Observes and describes characteristics of earth and space.*
Authentic Assessment Alignment:
WSS: IV.D.2 Explores rocks, water, soil, and sand.
TSG: 7. Demonstrates knowledge of Earth's environment
COR: BB. Observing and classifying

Child's name	Does the child understand that water can be found in many different places in the environment?	Evidence	Notes

Department of Education
Carmen Fariña, Chancellor

PRE-K FOR ALL

Lesson Title: Water and Ice
Lesson Type: Small Group

Unit of Study: Water	**Unit Focus Question:** What happens to water when it changes temperature?
Objective: Children will discuss the changes in state of water from solid to liquid.	
PKFCC Focus Standard: *PK.CLL.1 (Speaking and Listening Standards): With guidance and support, participate in collaborative conversations with diverse partners about pre-kindergarten topics and texts with peers and adults in small and large groups.* ***Additional PKFCC Standards:*** *PK.CKW.1 (Science): Asks questions and makes predictions based on observations and manipulation of things and events in the environment.*	**Link to Authentic Assessment Systems** WSS: II.B.2 Follows rules for conversations TSG: 10a. Engages in conversations COR: N/A
Materials: • Water • Ice • Tray or container (to hold melting ice)	**Connected Academic Vocabulary:** freeze, ice, liquid, solid, state, water
Procedure: **Hook:** Show children water and ice. Ask, "What do you know about water? What do you know about ice?" **Beginning:** Ask the following questions to elicit the ideas that ice is formed when water gets very cold and that ice can return to the liquid state (water) when it warms up: Where does ice come from? Where does water come from? How can you make ice? How can you turn ice into water? **Middle:** Facilitate a discussion between the children about how to melt the ice. If possible, allow the children to try to melt the ice using the strategies they suggested. **End:** Verbally summarize the children's discussions and attempts to melt the ice.	
Assessment: Is the child able to participate in a discussion about melting ice?	

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 touching ice and/or water. These children may observe rather than handle the ice and/or water. *For children who are ready for a challenge:* After discussing how to melt the ice to create water, engage these children in a discussion about how to turn water back into ice. Invite them to test their hypotheses.
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? Draw on these children's prior experiences with ice and frozen objects such as frozen treats (e.g., popsicles, ice cream) and discuss their experiences with these items.
Teacher Tip: • Use a tray or container to hold the ice that is appropriately sized for children to manipulate the ice as they attempt to melt it.
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: Water and Ice

PKFCC Focus Standard: *PK.CLL.1 (Speaking and Listening Standards): With guidance and support, participate in collaborative conversations with diverse partners about pre-kindergarten topics and texts with peers and adults in small and large groups.*

Authentic Assessment Alignment:
WSS: II.B.2 Follows rules for conversations
TSG: 10a. Engages in conversations
COR: N/A

Child's name	Participates in discussion	Number of exchanges in discussion	Notes

Lesson Title: Sink vs. Float
Lesson Type: Small Group

Unit of Study: Water	**Unit Focus Question:** What happens when we put things in water?
Objective: Children will make and test predictions about whether or not an assortment of items sink and float. .	
PKFCC Focus Standard: *PK.CKW.2 (Science): Tests predictions through exploration and experimentation.* **Additional PKFCC Standards:**	**Link to Authentic Assessment Systems** WSS: IV.A.3 Makes meaning from explorations, and generates ideas and solutions based on their own observations of the natural and human-made worlds. TSG: 24. Uses scientific inquiry skills COR: CC. Experimenting, predicting and draw conclusions
Materials: • Tub of water • Various small items some that sink and some that float such as tin foil, wood block, plastic bowl, crayon • Paper • Marker	**Connected Academic Vocabulary:** sink, float, predict
Procedure: **Hook:** Ask children what will happen if you drop a ____ (item that sinks) into a tub of water. Try it. **Beginning:** Ask children what *sink* and *float* mean. Provide support if they struggle to define each term. Share that you are going to test several items to see if they sink or float. **Middle:** Create a table to record children's predictions about whether an item will sink or float. Show children an item and ask them to predict whether it will sink or float. Record children's predictions on the table. **End:** Test each item by placing it in the tub of water. Note whether each item sinks or floats and compare the results to children's predictions.	

Assessment: Is the child able to make and test predictions?
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:* Provide simple pictures of items sinking or floating and post for reference to solidify vocabulary and concepts. *For children who are ready for a challenge:* Invite these children to find other items in the classroom to test.
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 participate in the activity and discussion? Provide simple pictures of items sinking or floating and post for reference to solidify vocabulary and concepts.
Teacher Tip: • Sinking and floating depends on buoyancy and density but at this point it is most important for children to note that there is consistency in the way objects behave: the same items always sink or float. • Be sure children wash their hands before and after hands-on water experiences. • Children are likely to get wet during hands-on water experiences. Be sure they have smocks and/or dry clothing available to change into if necessary.
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: Sink vs. Float

PKFCC Focus Standard: *PK.CKW.2 (Science): Tests predictions through exploration and experimentation.*
Authentic Assessment Alignment:
WSS: IV.A.3 Makes meaning from explorations, and generates ideas and solutions based on their own observations of the natural and human-made worlds
TSG: 24. Uses scientific inquiry skills
COR: CC. Experimenting, predicting and draw conclusions

Child's name	Makes predictions	Tests predictions	Notes

Lesson Title: Stems and Water
Lesson Type: Small Group

Unit of Study: Water	**Unit Focus Question:** How does water help us?
Objective: Children will see that water travels through a plant.	
PKFCC Focus Standard: *PK.CKW.1 (Science): Asks questions and makes predictions based on observations and manipulation of things and events in the environment.* **Additional PKFCC Standards:** *PK.CKW.3 (Science): Generates explanations and communicates conclusions regarding experiments and explorations.*	**Link to Authentic Assessment Systems** WSS: IV.A.3 Makes meaning from explorations, and generates ideas and solutions based on their own observations of the natural and human-made worlds. TSG: 24. Uses scientific inquiry skills COR: CC. Experimenting, predicting, and drawing conclusions
Materials: • Celery stalk with leaves • Clear container(s) • Water • Food coloring (at least one color) • Scissors • Paper • Marker	**Connected Academic Vocabulary:** drink, conclude, observe, water
Procedure: **Hook:** Show children the celery stalk. Share that the stalk is part of a plant and ask children what plants need in order to live. Highlight the need for water (or help children generate this response if necessary). **Beginning:** Invite children to join you in an experiment with the celery. Fill the clear container with water, add a few drops of food coloring. Repeat with additional containers and color if desired. Trim the bottom of the celery stalk. Place the stalk or stem into the container. Repeat with additional stalks/stems if desired.	

Middle:
Ask children to predict what they think will happen if you leave the celery in the colored water overnight. Record their responses.
Tell children you will revisit the celery stalk together tomorrow but in the meantime they may stop by and observe it on their own.

End:
The following day, invite children to observe the celery stalk again. What do they notice?
Refer back to their predictions from the previous day. Compare their predictions to the results.
Share that plants draw water up from their roots through their stems and into their leaves through their capillaries. Capillaries are hollow and water travels through them similar to the way water travels through a straw.
Water helps move nutrients throughout a plant. This helps the plant to stay alive. Without water plants will start to wilt and eventually die.

Assessment: Is the child able to make predictions about and observe how water travels through a plant?

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: Invite these children to do additional observations with you throughout the day. Help them to note the changes in the celery stalks at each observation.

For children who are ready for a challenge: Invite these children to use a science observation notebook to record their independent observations.

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, activity instructions, and participate in of the activity and discussion?
Prior to the start of this activity, invite these children to practice making predictions. This could be done while reading a book or doing other activities in the classroom. Make sure the opportunities to predict are very concrete and have clear results.

Teacher Tip:
Consider having a straw available to help demonstrate how water moves through the capillaries of a plant.
For classes with children who may be especially interested in the way water moves through a plant, consider doing additional research so you are prepared to provide specific answers to the children's questions.

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: Stems and Water

PKFCC Focus Standard: *PK.CKW.1 (Science): Asks questions and makes predictions based on observations and manipulation of things and events in the environment.*

Authentic Assessment Alignment:

WSS: IV.A.3 Makes meaning from explorations, and generates ideas and solutions based on their own observations of the natural and human-made worlds

TSG: 24. Uses scientific inquiry skills

COR: CC. Experimenting, predicting, and drawing conclusions

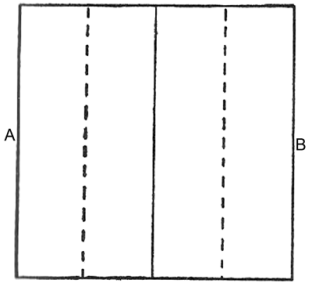
Child's name	Prediction(s)	Observation(s)	Notes

XI. Appendices

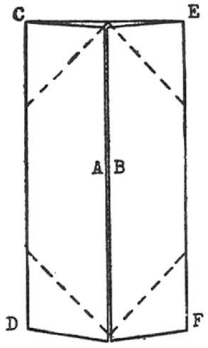
Appendix A: Paper Boat Folding

Step 1. Fold a square in half and crease then unfold.

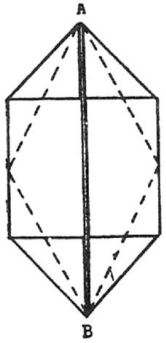
Step 2. Bring lines A and B to center fold and crease.



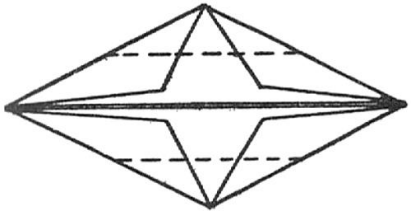
Step 3. Fold on diagonal dotted lines, bringing points C, D, E and F to the center line, and crease.



Step 4. Fold on dotted lines.



Step 5. Fold again on dotted lines.



Step 6. Turn boat inside out, holding folds carefully to prevent tearing.

Step 7. Finished boat, ready to float!

http://www.artistshelpingchildren.org/kidscraftsactivitiesblog/2012/03/how-to-make-origami-boats/

Appendix B: See Your Breath

Q. Why can you see your breath when it is really cold out?

A. Sometimes it looks like you can see your breath when it is very cold outside but it is not really your breath you see. You are actually seeing the water vapor in the air. The inside of your body is very damp, and when you breathe out there is a lot of water in your breath. When it is very cold outside the water vapor in your breath will condense and change from a gas into tiny droplets of water. The droplets are what you see.

Appendix C: Water Wall

A water wall is a structure created by attaching a variety of plastic containers and/or plastic piping to a surface. Water is poured into containers at the top of the wall and flows down to the bottom. A water wall can be created in many different ways. Any sort of containers can be used as long as water can flow through them. Be creative when considering what to build the wall on. The only requirements are that containers can be attached to the surface and that the children can reach the top.

The water wall shown in Section VII: Sample Student Work was created by attaching Velcro strips to an empty aquarium. The aquarium was placed in the classroom water table. Velcro was also added to the recycled materials and children were able to move the containers on their own.

To create a water wall you will need:

Something to mount the wall on such as:

Lattice
Piece of wood
Peg board
Pallet
Window or glass door

Materials for water to flow though such as:

Recycled plastic bottles
Recycled plastic containers
Flexible piping
PVC piping

Supplies for attaching such as:

Zip ties
Electrical or duct tape
Velcro
Screws
Suction cups

Directions:

Prepare the containers and bottles so that water can flow through them. Consider adding holes or cutting each container in half. Attach these materials to the mount. Place the water wall in a water table or place a waterproof container under the wall. Fill the waterproof container with water, supply the children with cups or containers that do not have holes and invite them to pour water through the containers.

Appendix D: Snow Dough

Ingredients:
1 cup baking soda
½ cup cornstarch
1 tablespoon vegetable oil
½ cup + 1 tablespoon water

Directions:
Pour all ingredients into a pan and mix well. The mixture may look dry; continue to mix until the consistency is soupy.
Heat mixture over medium heat stirring constantly for about five minutes until it begins to thicken.
Stir until the mixture is thick.
Pour the mixture out of the pan onto a sheet of waxed paper to cool. The mixture will be very hot.

Appendix E: Bubble Solution

Ingredients:
½ cup dishwashing solution
2 cups water
2 teaspoons sugar

Directions:
Mix all ingredients together in a shallow pan.
Dip bubble wands in the mixture and blow bubbles.