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One Preschool's Adaptations and Modifications to Maintain Nature-based Programming During COVID-19

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ABSTRACT

The COVID-19 pandemic required many early childhood programs to adapt to remote learning. While there is research on early childhood teachers' responses to this new mode of learning, few studies examined how teachers in nature-based programs modified their practices. This qualitative case study examines early childhood educator practices in a nature-based university laboratory school program in the United States. We focus on how teachers maintained their commitment to nature-based, child-centered, and developmentally appropriate practices while supporting children and their families during remote programming. The data include classroom and school-wide documentation from the first three months of the COVID-19 pandemic when the teachers shifted to online remote programming. The findings illuminate how teachers adapted their nature-based curriculum and programming while maintaining alignment with the *North American Association for Environmental Education Guidelines for Excellence in Early Childhood Environmental Education* despite providing remote instruction.

Keywords**:** nature-based education; early childhood education; remote learning; developmentally appropriate practice; SDG 4 - Quality Education

The COVID-19 pandemic created unprecedented conditions for early childhood education (ECE) around the world. In the United States, mid-March 2020 began the time of disruption, forcing programs to quickly adapt teaching practices, expectations, and modes of communication to meet children's needs while coping with the evolving pandemic and personal challenges (Pic et al., 2023; Weiland et al., 2021). Many ECE programs remained closed during this period, whereas others shifted their programming to remote platforms (Ali et al., 2021; Grimm, 2020). Research exists on how ECE teachers adapted to the new reality, yet few studies examine educator practices in ECE nature programs.

ECE nature-based programs in the U.S. are informed by the *Early Childhood Environmental Education Programs: Guidelines for Excellence* developed by the North American Association for Environmental Education (North American Association for Environmental Education (NAAEE), 2016). Nature-based education is place-based education (Schools, 2019) and not pedagogically designed for remote learning; therefore, it leaves the adaptation of its practices at the discretion of teachers. Beginning in mid-March 2020, ECE nature-based program teachers faced a twofold challenge: 1) maintaining child-led, developmentally appropriate practice, and 2) preserving the nature-based component while all class members were home and interacting online. To elucidate teachers' responses to the new reality, this study examines how one university laboratory school, serving children ages 2-6 years, worked to sustain its commitment to providing high-quality and developmentally appropriate nature-based programming for 82 children and their families. This study explores the research question:

- Was a university nature-based laboratory school able to address the *Early Childhood Environmental Education Program Guidelines for Excellence* via remote programming during the initial months of the COVID-19 pandemic, and if so, how were they able to achieve this?

Theoretical Framework

NAAEE Guidelines for Excellence: Early Childhood Environmental Education Programs

The North American Association for Environmental Education *Early Childhood Environmental Education Programs: Guidelines for Excellence* (North American Association for Environmental Education (NAAEE), 2016) (hereafter, *Guidelines for Excellence*) were designed as recommendations for programs serving children birth–8 years to reflect best practices in nature-based programming while also prioritizing the development of the whole child. These guidelines depict a philosophical approach for teaching young children in nature-based contexts and provide structures for developing, improving, and evaluating programs. In addition, the guidelines describe the anticipated nature of the curriculum, instruction, stakeholder relationships, and programmatic structures.

The *Guidelines for Excellence* are organized around six Key Characteristics: (i) program structures, (ii) developmentally appropriate practice, (iii) play and exploration, (iv) curriculum, (v) place, and (vi) educator preparation. Each Key Characteristic consists of two to eight Guidelines that provide additional context about high-quality practices in nature-based programs and encourage the inclusion of local culture and climate. Key Characteristic 1 identifies core programmatic-level components of a high-quality early childhood environmental education program with an overarching emphasis on components essential to the mission and philosophy of high-quality programs. Key Characteristic 2 calls for developmentally appropriate practices that address the needs of the whole child through child-centered authentic learning experiences. Learning experiences that are culturally relevant, grounded in play and exploration, developed with the child in mind, and aligned with children's individual needs are emphasized. Key Characteristic 3 calls for programs to provide children with time to play and explore the world around them to support the development of the whole child and foster creativity and understanding of the world. Key Characteristic 4 provides a comprehensive vision for a developmentally appropriate, nature-based curriculum. This characteristic identifies the need to address children's developmental and learning needs and foster cognitive development through building a sense of curiosity and thinking skills through inquiry and exploration. Key Characteristic 5 acknowledges the importance of place and supports the use of a wide variety of safe, enticing, and comfortable indoor and outdoor spaces to encourage exploration and learning. Key Characteristic 6 identifies and highlights the knowledge that the professionals in high-quality environmental education programs must possess and demonstrate. The Key Characteristics are intertwined and overlap, with a consistent focus on the holistic development of young children in nature-based programs. The Appendix of this paper outlines the six Key Characteristics and their Guidelines.

Literature Review

Nature-Based Programs

In the United States, the popularity of nature-based programs has grown in response to the increased focus on curriculum standards as well as with concerns about increased screen time for young children and circumstances that have reduced opportunities for child-initiated play and outdoor play. There are approximately 800 nature-based preschools in the U.S. (North American Association for Environmental Education (NAAEE), 2023). A curriculum rich in child-led learning, free play, and natural outdoor play spaces are fundamental components of nature-based programs (Finch & Bailie, 2015). Nature-based programs generally share three common elements: 1) nature themes and daily nature exploration are central to programming; 2) programs are equally committed to high standards and developmentally appropriate practices in ECE; and 3) best practices of environmental education are adopted (Finch & Bailie, 2015). While nature-based learning occurs indoors and outdoors, outdoor classrooms support unique exploration opportunities (Bohling et al., 2010; Finch & Bailie, 2015), diverse educational experiences (Finch & Bailie, 2015; North American Association for Environmental Education (NAAEE), 2020), child-initiated, and full-body

learning. Through nature-based education, children receive opportunities to interact directly with nature, which promotes environmental stewardship (Kuo et al., 2019) and independent problem-solving (Fjørtoft, 2004).

Developmentally Appropriate Practice

Developmentally appropriate practice (DAP) is a framework for high-quality early childhood programs grounded in child development and the social, cultural, historical, and linguistic contexts of children's and families' lives (Iruka, 2022; LaForett et al., 2023; National Association for the Education of Young Children (NAEYC), 2022). Teachers create a classroom environment that fosters whole-child development through the use of child-centered teaching practices that address children's developmental needs (cognitive, physical, social-emotional, and linguistic) and content-learning needs (literacy, mathematics, science, social studies, and creative arts). To support the healthy development of all children, teachers work collaboratively with families to foster partnerships that enable them to understand and support the child's needs and background (Mancilla & Blanco, 2022; Author & Author, 2024). Teachers strive to establish strong relationships with children and families and create a warm and welcoming environment that supports engagement and learning (Wright, 2022).

As a part of DAP, planning is an intentional process in which teachers focus on the developmental domains for growth and content learning areas while supporting play-based learning and exploration. Such intentionality is grounded in an understanding of each child's strengths and needs that arise from ongoing observation, documentation, assessment, and conversations with families (Masterson, 2022; Scott-Little & Reschke, 2016). Play-based learning incorporates a spectrum of experiences from free play to teacher-guided play and provides children with the opportunity to explore, make mistakes, and learn through trial and error (Pyle & DeLuca, 2017; Zosh et al., 2022). Play allows children to initiate learning experiences. The inquiry process is supported by the educator posing strategic open-ended questions to encourage extended and expanded learning and to connect children's prior knowledge to new learning experiences (Becker & Mastrangelo, 2017; Ontario Ministry of Education, 2017; Weisberg et al., 2013).

Remote Programming in Early Care and Education Settings during COVID-19

The COVID-19 pandemic forced teachers to reinvent their classroom practices. In-person programming was relocated online, creating new challenges for children, teachers, and families. Several barriers emerged during the transition to remote programming, such as differences in educational support structures for ECE compared to K-12, and inequity of technological resources among families (Aslam et al., 2023; Shukia & Marobo, 2024). Unequal access to technology impeded the educational process for children whose families did not have an Internet connection or mobile device in their household (Timmons et al., 2021). Additionally, families and teachers had to familiarize themselves with how to engage in remote instruction, as not everyone had the same level of technological literacy (Aslan et al., 2022; Nikolopoulou, 2022). Furthermore, children had to acquire new ways of communicating, a challenge for younger learners. As such, teachers noted the need for clear guidelines that would enable them to successfully facilitate remote instruction (Ford et al., 2021). Teachers also perceived that online education suffered from the paucity of differentiated instruction, such as providing feedback, task modeling, and one-on-one guided interaction (Aslan et al., 2022). Meeting the individual needs of children while maintaining everyone's attention during synchronous classes was difficult because of the lack of in-person interactions between children and their teachers (Steed et al., 2022).

Despite these barriers, many early childhood teachers adapted their instructional practices to accommodate remote programming for young learners. Although it was not an ideal option, remote learning provided a safe way to continue the educational process. Programs varied according to how they provided remote delivery with some teachers providing web-based resources or educational programs for families to utilize, and others providing synchronized online whole-group learning experiences or asynchronous recordings for children and families to view programming at convenient times (Lee et al., 2021; Timmons et al., 2021). The lack of meaningful, in-person social interaction between children was a primary concern reported by both educators and families (Timmons et al., 2021). To address concerns of social isolation, teachers providing online synchronous experiences occasionally divided children into small groups during class time and held one-on-one sessions to provide more individualized support

and maintain a sense of community (Steed et al., 2022). Online instruction also led teachers to develop new curricula and innovate ways to present content across various online platforms, such as interactive tasks, videos, online games, art, and music (Aslan et al., 2022; Lee et al., 2021).

Studies of ECE teacher practices during the first three months of the COVID-19 pandemic often utilized interview or survey methods (Aslan et al., 2022; Atiles et al., 2021; Steed et al., 2022; Timmons et al., 2021). However, few studies utilized classroom-based materials. Additionally, there is limited scholarship on nature-based teacher practices during the COVID-19 lockdowns, particularly in ECE settings. One nature-based program study by Assaf and Gan (2021) examined Israeli environmental education teachers' practices across preschool- and school-age groups during March-April 2020 remote learning. The authors analyzed classroom materials and teacher interviews and found that teachers encouraged both direct and indirect experiences with nature and provided active and passive learning opportunities for their students. Teachers also strove to foster nature connectedness, connected environmental education to the pre-COVID period, incorporated technology into instruction, and encouraged students and families to share their experiences with nature.

During the COVID-19 pandemic, educators throughout the globe sought information about how to continue to support children's growth and development and address the needs of children and families while teaching remotely. Studies examining teachers' practices in nature-based ECE programs during the initial months of the COVID-19 pandemic are limited Additional research is warranted to support educators should new crises emerge. This study seeks to understand nature-based early childhood educators' practices and how they navigated remote learning challenges to support children through place-based teaching approaches. This study contributes to the literature through an examination of how early childhood educators in a university-affiliated laboratory school adapted their instruction for remote learning while adhering to the NAAEE Guidelines for Excellence. It also provides insight into how these educators navigated the challenges of supporting children through place-based, nature-based teaching approaches. Further, findings add to the early childhood education literature about the COVID-19 pandemic and remote teaching practices through documenting how teachers maintained high-quality nature-based early childhood education and engaged families. Findings can be used to inform teaching practices and procedures for supporting learning and development during a crisis or situation that necessitates educators need to work via remote approaches, such as addressing the needs of a family in transition or an ill child.

Materials and Methods

This study used a qualitative case study design (Yin, 2018). The main characteristics of a case study are the selection of a single unit of inquiry and the definition of its boundaries (Flyvbjerg, 2011). Case studies allow for a deeper understanding of contemporary real-life phenomena, permit the use of multiple data sources, and are applicable to situations in which the researcher does not have control over the event, particularly when it occurred in the past (Yin, 2018). An in-depth examination of a phenomenon through a case study provides concrete knowledge that is embedded in the context.

Research Site

This study was conducted at a university-based early childhood laboratory school located in the mid-Atlantic region of the United States. The program is licensed by the state and accredited at the highest level by the National Association for the Education of Young Children (NAEYC) and the state. At the time of the study, there were four full-time and two part-time teachers. All full-time teachers had 13-40+ years of teaching experience, held one or more master's degrees, and several had additional degrees including in nature-based education. In a typical year, this laboratory school supports over 175 children ages 6 months-6 years. Additionally, teachers serve as mentors, coaches, and instructors for about 300 university students annually. The emergency situation in the early months of the pandemic required in-person programs to abruptly move to remote programming, impacting instruction and practice for five classes (ages 2-6 years; 82 children and their families), 95 undergraduate students, and two visiting scholars. The five classes included a two-year-old class (2s); a three-year-old class (3s); a three- and four-year-old prekindergarten class (PreK); a nature preschool class (Nature) for ages three to four years; and a prekindergarten/kindergarten class (PreK/K) for ages four to six years.

The laboratory school program is grounded in its commitment to child-centered, developmentally appropriate practice (NAEYC, 2022). The curriculum emphasizes nature-based education, social-emotional development, and mindfulness. Individualized instruction is used to address learners' needs and position relationships as central to instruction. Teachers are committed to families and weave culturally responsive practices throughout their programming and daily interactions. These commitments are highlighted in the mission and guiding principles of the program and are evident in the mentoring and instruction provided for young children and university students. Additionally, teachers, staff, and undergraduate students participated in critical self-reflection and evaluation of learning to inform curriculum planning and decision-making.

As remote programming was established, teachers worked to support the children and their families to maintain the relationships they had built throughout the year. Teachers also worked to ensure that children continued to be engaged in early childhood programming and sought to provide a sense of consistency and routine in light of unprecedented events. Teachers facilitated communication with families through email, Zoom, FaceTime, phone calls, Bloomz (a communication app for supporting classroom-level adult communication), Google docs, and the school's Facebook page.

Data Sources and Analysis

Data for this study were program- and classroom-level sources from mid-March through early June 2020. Classroom-level data were teacher communications to families about class curriculum and resources, including classroom emails and newsletters (n =209), social media public posts and class group interfaces (n =295), Mindfulness Challenge emails (n=7), a class resource Google folder, and photo albums (n=4). Program-level data were program documents (n=3), media coverage (n=5), program-level staff communications and shared resources, and staff meeting notes and transcripts (n=2). The researchers were provided access to all program- and classroom-level data by the school administrator and teachers. This study is part of a larger study approved by the University Institutional Review Board. As a part of the larger project, additional insight into classroom practices was provided via recorded classroom Zoom sessions that were viewed and summarized by the research team, and one of the researchers attended staff meetings and periodically attended zoom classes throughout the lockdown.

Qualitative analysis was conducted using the multi-cycle approach described by Saldana (2016) which engages researchers in coding and reorganizing the data multiple times to develop a deeper understanding of the phenomena being studied. Each researcher was very familiar with the data from previous work with the data set. Throughout the analytic process, the researchers met regularly and utilized a collaborative qualitative analysis (CQA) approach to discuss the data and develop a mutual understanding of the data and analysis (Richards & Hemphill, 2018). This coding approach has been noted to support trustworthiness and rigor throughout the analytical process (Richards & Hemphill, 2018). In the first coding cycle, the data were read multiple times to identify nature-related curricular topics that spanned the five classrooms (Richards & Hemphill, 2018). Second, using a holistic coding approach, data were coded for each curricular topic and thematic reports were produced based on the nature-based curricular topics. Next, the NAAEE Guidelines for Excellence (2016) were used as *a priori* codes and an interpretive lens for examining the data. Each thematic report was then hand-coded during a third coding cycle. Coded reports were discussed as a team, and all questions or differences in opinion were reconciled by consensus process. To confirm that each of the NAAEE Guidelines were addressed in the data, a central matrix was compiled as part of a fourth cycle of analysis (Saldana, 2016); a streamlined version of the matrix is included in the Appendix.

To ensure credibility and validity, the data were analyzed using an inductive approach and member-checking with teachers (Gibbs, 2018). Methods triangulation (Patton, 1999) was employed to verify the consistency of findings across multiple data sources. Additionally, the data were examined line-by-line and searched for negative cases that did not fit the pattern trends (Gibbs, 2018).

Ethical Considerations

This research study was approved as an exempt study by the [Blinded] Human Subjects Research Institutional Review Board. Exempt status was determined following the United States Department of Health and Human Services Common Rule 45 CFR § 46.102. Additionally, the study conforms to the ethical principles of the Declaration of Helsinki and the Belmont Report. The data set is an archived collection of teacher communications to families about the curriculum. The data set was provided by the school. We have written permission and consent to use the data set from the school administrator and the teachers who worked provided us with access to the data set.

Results

This programmatic case study of a university laboratory school that operated remotely during the initial months of the COVID-19 pandemic examined how the nature-based program met the NAAEE guidelines. Findings illustrate how teachers incorporated the NAAEE's key characteristics and guidelines into their remote practices. Teachers leaned into place-based teaching, shifting from the singular location of the school to a broader landscape, including teachers and family homes, and the natural phenomena present in the local environments of teachers and families. Using the three most comprehensive curricular themes with clear nature-foci (*Connecting to Nature, Studying Birds, Earth Day and Caring for the Earth*), we describe emergent program-wide curricula and how the NAAEE guidelines were addressed. Space limitations prohibit our ability to address each NAAEE Guideline. Therefore, we focus on selected Guidelines from each Key Characteristic via a discussion of the three program-wide nature-based themes.

Connecting to Nature

The NAAEE Guidelines for Excellence (2016) state that "environmental education often begins close to home, encouraging learners to understand and forge connections with their immediate surroundings" (p. 6). Prior to COVID-19, school-based nature curricula were extended when teachers shared the curriculum with families and suggested additional at-home family activities. The COVID-19 lockdown required teachers to rethink their nature-based programming and reposition their instruction in children's homes, yards, balconies, and neighborhoods. At the onset of lockdown, initial challenges to remote places included learning to use Zoom technology, maintaining relationships between the school, families, undergraduate students, and teachers, and developing approaches for everyone to learn together. Despite these initial challenges, as the Nature teacher noted in a staff meeting, "We persevered through it because we wanted to make sure that the kids were reminded that this still is a nature program, and we still wanted our focus to be on nature. Our themes had to do with the different natural [phenomena] that we saw were happening at our houses."

To adapt to remote place-based learning, teachers created ways to incorporate nature in indoor Zoom-based activities and foster outdoor connections. When it was deemed safe to go outdoors, teachers began supporting home-based place-based remote learning by encouraging families to explore outdoors in their immediate backyards and neighborhoods. Teachers also identified safe outdoor areas where families could explore (Guidelines 5.1, 5.5).

> Send me (via e-mail) a photo of your child in a WILD space either in their yard or beyond. These "beyond" spaces might be outside your fence or a state park. Our State Park system has remained open and is waiving entrance fees. If you do visit a park, don't forget - social distancing! (Bloomz post, Nature teacher)

Teachers encouraged families to go outdoors to observe and notice the spring changes. Families were prompted to document and share findings with the classroom community by bringing materials and artwork to the Zoom class or posting photographs on class social media or Google photo albums. In one class newsletter, a student teacher wrote,

> As the weather gets nicer, go on a nature walk and bring some paper and crayons. Try to draw what you see. Send us any pictures of what they draw! Tip: Call them art detectives and have them find… objects to draw/paint. (Newsletter, PreK student teacher)

Teachers needed to be sensitive to the varying needs and comfort levels of families and children (Guideline 5.3). Teachers' weekly emails contained nature-based activities and resources for families who were not able or comfortable to participate in Zoom sessions, for those who were searching for additional activities to do with their children, and also for those who could not go outside. One teacher tried to accommodate differing needs by providing activities that could be done indoors or outdoors including, through windows, on balconies, and in yards.

> Tuesday we will focus on Our Backyards/Balconies & Beyond - What does it mean to be a Nature Explorer/Earth Guard? We will draw maps so your children will need paper and a writing utensil. (Bloomz post, Nature teacher)

The teachers also brought the outdoors inside by incorporating nature into class Zoom sessions. Many different approaches were used, including having children or teachers create videos or leading Zoom sessions from outdoors.

> Tomorrow at 1 is going to be exciting as we will be learning about honeybees! I will be taking videos today of the inside of one of my hives and hopefully will get a bee to sip honey from my hand. (Email, PreK/K teacher 1)

Children were invited to share nature finds during class Zoom sessions. Additionally, children in the Nature class and the PreK/K class shared their outdoor spaces through yard tours facilitated on Zoom,

> We loved being able to check out Sam's Park! She was such a great tour guide as she shared where she likes to make "witches brew." Your children were so kind as they complimented her on her space. If you haven't signed up to share your WILD space (yard or beyond) with us please do so. You may need to use Zoom on your phone in order to be able to move freely around the space. (Email, Nature teacher)

Teachers created nature-based experiences in which children could participate synchronously while on Zoom. Many of the activities were designed to support children using natural materials. Some children participated in class activities while on their balconies, porches, or doorsteps, others ventured into their yards.

> Thursday - Nature Portraits - We would love for you to join us outside for our Zoom together. We encourage the children to collect various nature items before this meeting, but if they are outside, they can always add items as we create. We will make nature portraits together. (Email, Nature student teacher)

Teachers also encouraged children to observe clouds, the moon, and the weather. As evident in one class's study of the wind, they even worked to make the invisible visible in order to help demonstrate concepts.

> Windy Day - Have your child bring something to show the wind - This could be a pinwheel, a ribbon wand, a scarf, butterfly wings - anything that would help the children to see the wind. (Email, Nature teacher)

Teachers were concerned about the well-being of families during these uncertain and stressful times. In their emails, they made connections between outdoor experiences and positive emotions and promoted mindfulness as a means of self-care and support.

> One of my favorite activities is to lie down on my back and watch the clouds roll by. I enjoy looking up at the canopy of trees overhead, or just looking for birds and listening to their songs. (Email, 3s teacher)

> I am also working on uploading a video reading of A Thank You Walk that I did a few days ago. Taking a thank you walk is a wonderful way to get outside and practice gratitude at the same time-

> - two scientifically proven strategies for improving physical and mental health. (Mindfulness Challenge #2, PreK teacher 1)

Collectively these examples illustrate how teachers adapted nature-based instruction to remote, home-based places by connecting children to nature in their surroundings through hands-on experiences. The excerpts also depict teachers' attention to DAP and the whole child, with their focus on children's social-emotional development, wellness, and physical health and children and families' mental health (Guidelines 4.1, 4.6). Teachers' environmental literacy and child-centered pedagogical approaches supported hands-on learning through the five senses and authentic experiences (Guidelines 2.3, 2.2). Additionally, they emphasized children's development of skills needed to learn about and connect to the local environment through emphasis on working with natural materials in order to observe, notice, document, and communicate findings (Guideline 4.4). Throughout these times, the teachers were cognizant of different family circumstances and worked hard to provide nature-based activities for families who stayed inside and/or could not or did not want to engage through Zoom (Guidelines 1.3, 5.3). All families were provided with a wide variety of learning activities as well as modifications that addressed children's different needs and families' health and safety concerns (Guidelines 2.4, 6.1, 5.5).

Studying Birds

Prior to the pandemic, teachers had engaged the children in the study of birds at school (Pollock et al., 2020). In the remote setting, teachers were committed to maintaining program routines and traditions as one way to evoke coherence and consistency for themselves, the children, and families. Bird study was adapted to remote programming through activities specifically designed to engage children and families, such as building bird nests and observing birds in their local environment. Nest building, eggs, and hatching activities addressed by each teacher demonstrates how they utilized their nature-based knowledge, environmental literacy (Guideline 6.3), and teaching practices to modify activities for remote learning. The teachers actively engaged children in hands-on, authentic experiences with natural and recycled materials available in the children's homes and yards (Guidelines 2.2, 3.1, 5.2). Suggesting the use of common, easily accessible materials and local, nature-based materials available in children's home environments was one way in which teachers were able to engage children in authentic and nature-based hands-on activities (Guideline 5.1).

> I have attached a few articles that describe how to make a bird nest, some using recycled or repurposed materials, such as bags or even boxes, and some using natural materials. Some use glue, some do not. The paper bag nest is a great way to start a conversation about nest building. One article has great questions such as, "Will the nest hold up in the wind?' or "What happens if it gets wet?" These are questions for your child to wonder about as they are building….
>
> Maybe going on a walk to look for real bird nests in your community can provide a relaxed time for discussion of how and where birds build their nests. Those "I wonder...." statements can be a window into your child's imagination and the building of the nests can be a demonstration of their creativity and their learning. Maybe it can be a family activity….
>
> I have also attached a few close-up photos of the real bird nest I used [in class] this morning. Your children can see up close the many different materials that a bird used in building this nest. (I did put the nest into my freezer for a while to ensure that it was safe for me to touch.) I encourage you to be creative as you complete this building together as a family. We are really excited to see what you and your child have to share with us at our Thursday Zoom. (Email, 2s teacher)

Consistent with the NAAEE Guidelines (2016), the program demonstrated a strong commitment to family partnerships (Guideline 2.1). These relationships gained a heightened level of importance as it became apparent that parents needed to facilitate school-based interactions with their children. As evidenced in the above quote, the teachers provided information to support children's development and engagement in activities that could provoke thinking and conversation (Guidelines 3.2, 4.2, 6.4, 6.5) while also supporting family engagement and enabling parents to take on new roles as teaching partners (Guidelines 1.4, 6.3, 6.2, 6.4, 6.5).

Another example of extending classroom practices to the remote setting was evidenced by the 2's and 3's teachers. Prior to the pandemic, both toddler classes studied birds that visited their classroom window feeders. This activity was adapted to the remote setting by encouraging families to observe birds near their homes.

> Hi friends, See the beautiful Northern Cardinal at my feeder here at home? What birds are you seeing and hearing while you are at home? (Email, 3s teacher)

All the teachers worked to foster real-life connections with birds, nests, and baby birds in nature. In the PreK/K class, a teacher created a video of herself walking around her yard locating bird nests in shrubs and on her porch, which was then shared during a synchronous Zoom session. In one email to families, a PreK teacher shared moments from her daily walk and explained that these nature-based experiences evoked a sense of joy and beauty.

> I went for a walk in the neighborhood today as usual. There are usually two geese by the pond. This afternoon when I took a moment to look closer, I saw two goslings and a cracked egg near the two geese. The goslings might have just hatched! I was so excited to share the pictures (see attachments)….This moment reminds me of a quote by Stephanie Mills in one of Mindfulness Challenge emails from Miss W. "There is always beauty to see if you have an eye for it. Looking is a practice. Seeing is a gift that comes with practice." I experienced a moment of joy as I took time to notice. What are your moments of joy today? (Email, PreK teacher 2)

The study of hatching is an annual tradition at the laboratory school; two classes continued this practice. One class connected families to a chick hatching webcam through a State University 4-H program providing families the opportunity to view chicken eggs in an incubator and live candling experience.

> Our Egg Exploration Zoom session starts at 1:45 p.m. tomorrow. We are going to listen to the story, *Where do chicks come from?*, by Amy Sklansky then watch, "Live Candling" on the Egg Cam. I wonder how the eggs have changed over the past 7 days? We will be nature scientists and observe closely what's happening inside the eggs. We will also practice our observational drawing skills to document the growth of the eggs. Observational drawing is drawing what you see as realistically and as true to life as possible. It is a great exercise in seeing and exploring how all of the details interact. If your child (or you) would like to join us in doing an observational drawing, bring a piece of paper, a pencil or black marker with you. If you would like to include color in your drawing, bring crayons, colored pencils or markers. Find out more about the eggs - the third week of incubation, days 14-19." (Email, PreK teacher 1)

A different teacher brought chicks into her home and shared updates with the families via email, videos and synchronous Zoom classes.

> We rescued some chickens, a chick, and some eggs from the middle school. Out of the 4 eggs that made it to hatch day, 2 have hatched so far. Egg #1 needed some help, but I took this great video of egg #2 hatching. Enjoy Friends! (Email, Nature teacher)

Earth Day and Caring for the Earth

Teachers created school-wide events to support a sense of community and belonging (Guideline 1.8). They made a programmatic decision to encourage families to go outside, engage in the environment, and celebrate Earth Day. On Earth Day, teachers did not hold Zoom classes; instead, they encouraged families to spend the day off technology and go outdoors. These decisions reflected the teachers' ongoing concerns about young children learning through technology, their desire to limit screen time, and their commitment to young children's engagement in physical activity and active learning (Guideline 4.6).

To encourage families to go outdoors on Earth Day, the teaching team developed an Earth Day activities resource list that was distributed throughout the school. The resource list provided activities that families could complete

either indoors or outdoors. Many ideas (crafts, nature walks, scavenger hunts, Earth Day books, recycling activities, sound hunts, and songs to sing) were open-ended and flexible regarding choices and materials. Collectively, the activities addressed a wide range of developmental and learning areas. Some families shared pictures or short messages, one parent wrote, "We didn't take a lot of pictures but played in the yard, tried to fly a kite (no luck), and hung out. [We] also picked flowers from our yard and made ornaments" (Email, PreK parent).

The student teachers' Earth Day newsletter included descriptions of artists who grounded their work in nature with related activities for families, such as nature walks and crafts for them to do together (Guidelines 6.1, 6.2, 6.3, 6.4, 6.5).

> Attached is this week's newsletter, there are lots of fun activities your family can do to celebrate Earth Day on Wednesday! From creating art like Monet who was inspired by nature, to building forts, to going on a nature walk, there are many resources to look at. If you're able to do any of these activities, please share it with us!

Additionally, teaching teams created a weeklong Earth Day curriculum with activities about sustainability and recycling that helped children think about ways they could take care of the Earth (Guideline 5.6). Several teachers taught about the types of plastics and recycling, while incorporating number recognition,

> Please find 5 plastic containers that can be recycled. We will be looking at recycling numbers on the containers. They can be found on the side or bottom of the containers in a triangle made of arrows and range from 1-7. (Email, 3s teacher)

Children also repurposed household materials for construction activities,

> Find materials in your house that you are not using anymore and repurpose them to build something new! Questions you might ask your child to help them think… How do you know or decide if something can be repurposed (used again in a new way)?... Are we still using this material? Is it still needed? How do we know this material is ready to be repurposed? Is it safe to repurpose this material? How are we helping the Earth by repurposing this material? (Email, PreK teachers)

Teachers read books about ways to care for the Earth, discussed sustainability, and worked to help children understand the impact that they could make on the Earth. As one teacher wrote to parents,

> I have attached a list of activities and resources that the teachers have compiled that focus on recycling, and how we can positively impact the environment. Children become Earth Guards as they feel the power in their ability to help the Earth, even if it is simply picking up trash when out for a walk or reminding a grownup to recycle. (Email, 2s teacher)

Another teacher wrote,

> Be prepared! Your little Earth Guards can become quite passionate about this and how they can help to save our planet! Here are a few wonderful books that can further their interests… (Email, 3s teacher)

It was evident that teachers sought to foster children's engagement in caring for the earth. Earlier, during the pandemic, when a strong storm knocked down trees and limbs in the school's outdoor learning area, one teacher involved the children in writing a letter to University Arborists. Before the class activity, she wrote to parents,

> I have a video to show them of some of the wind damage by our creek. My hope is that we can have the children help write a letter together to [University] Arborists for help in the cleanup process. After all, we are Earth Guards! (Email, Nature teacher)

Additionally, teachers encouraged families to continue these efforts even after Earth Week. As one teacher wrote, "Although Earth Week is over, these are great conversations to have every day of the year because we are all protectors of the Earth" (Email, PreK teacher 1).

Discussion

Remote instruction was a form of practice that these teachers never envisioned for their work, nor prepared for, and in many ways contradicted their beliefs about high-quality ECE practices. In fact, during the early weeks of the new reality of remote place programming, the Nature teacher declared, "I am not an online preschool teacher" (Staff meeting, April 2020). Not only did the experience of remote programming contradict this teacher's philosophy and beliefs about teaching, but it also contradicted the program's historically in-person place-based curriculum and relationship-based teaching approaches. Despite constraints that resulted from the COVID-19 lockdown, the teachers showed alignment with each of the NAAEE Key Characteristics from mid-March through May 2020. As evident in the findings, the teachers demonstrated strong knowledge of early childhood foundations throughout the pandemic, as well as each of the six NAAEE (2016) Guidelines for Excellence. Alignment was visible in their practice, commitment to children and families, and in the way they developed, supported, and communicated about environmental education during the early months of the COVID-19 pandemic. This discussion details how the NAAEE (2016) Guidelines for Excellence Key Characteristics were addressed by these teachers and how this study connects to research on other ECE programs during the initial months of the COVID-19 lockdown.

Program Philosophy, Purpose, and Development

Despite being forced to shift to remote, home-based programming, teachers maintained their commitment to quality nature-based early childhood education (Guideline 1.2). Supporting and sustaining relationships and a strong sense of community were central to teachers' practices (Guidelines 1.1, 1.8). Teachers could not support children or classroom-level programming without strong family engagement; family members assumed new roles as teaching partners. Howard's study (2024) of K-5 virtual programs also described the critical importance of this parental role. The critical importance of families was also noted by Steed et al. (2022) and Aslan et al. (2022) who found that ECE teachers used multiple methods to interact with families. Throughout the teachers' communications in this dataset, parents and family members were positioned as essential partners in facilitating school-home communications and in the process of educating and supporting their children (Guideline 1.7).

It has been noted that while varying according to socio-cultural-historical, economic, and geographic contexts, many parents, children, and early childhood educators around the world experienced high levels of stress, anxiety, and depression during this challenging time (Berger et al., 2022; Markowitz & Bassok, 2022; Martin et al., 2022; Rodriguez et al., 2022; Singletary et al., 2022; Souto-Manning & Melvin, 2022). The teachers in this study were deeply concerned about the health and well-being of all program community members and actively worked to support them through curricular programming (Guideline 1.5). One approach was to connect families to nature to support mental health and wellness (Wells & Evans, 2003). Emails regularly contained reminders for families to practice self-care through mindfulness challenges and outdoor explorations with their children. Teachers included yoga in class Zoom meetings in which children and families participated, and they shared the health benefits of going outdoors. They also tried to help the children understand the pandemic and why they were home and away from their extended family and friends. The teachers encouraged families who felt comfortable to go outdoors in their home environments for fresh air, exercise, and mental well-being.

Teachers worked with families to determine the support and approaches that worked best for them and their circumstances (Guideline 1.3). They evaluated their practices, reflected on their experiences with colleagues, and incorporated feedback into their work. Through a daily process of iterative self-reflection and assessment, teaching teams examined class proceedings, emerging pandemic related information, and their teaching practices in light of children's developmental and learning needs and current contexts (Guideline 1.6). Collectively, these supports helped the teachers navigate the challenges of remote teaching.

Developmentally Appropriate Practice

The teachers had a strong commitment to teaching the whole child and worked to actively engage the children with their world through hands-on, authentic interactions. The foundation for teachers' curriculum and interactions with children and families (Guideline 2.1) was rooted in DAP (NAEYC, 2022). This philosophical foundation created tensions for teachers who struggled with the structure of online programming, which was conducive to teacher-directed approaches and positioned children as passive learners. Teachers worked to reconcile these tensions through play-based, hands-on, and interactive child-centered experiences that sought to promote movement and nature-based holistic learning (Guideline 2.3). Teachers regularly engaged children in authentic, real-life activities using common household and nature-based materials that families and teachers could find in their environment (Guideline 2.2). They sought to continue addressing social-emotional and interpersonal needs as well as the physical, language, and cognitive development of each child, while also providing literacy, mathematics, STEM, and social studies instruction (Guideline 2.4). Additionally, teachers worked to accommodate the different developmental and learning needs of the children, their families, and their contexts (Guidelines 2.4 and 1.3). Activities were differentiated by embedding individual choices and flexibility, as families could use a wide range of materials and modify activities to fit their circumstances.

Play and Exploration

During the lockdown, teachers encouraged parents to provide unstructured time for children to play and explore both indoors and outdoors in safe environments (Guideline 3.2). Activities that teachers provided encouraged children and families to explore local parks, their yards, and neighborhoods together while looking for specific items, observing the world around them, and experiencing the weather (Guideline 3.1). Children and families were encouraged to play with natural materials from their environment and gather leaves and flower petals to create art, such as nature mandalas and collages. Additionally, teachers communicated information through email, apps, and newsletters with families including, activities, guiding questions, and ways to support children's exploration, inquiry, and play.

Curriculum Framework for Environmental Learning

Despite being in lockdown with social distancing and time at home, teachers worked to foster nature-based connectivity, environmental literacy, and a personal sense of responsibility and care for the Earth. Children and families were encouraged to go outside to observe, experience, and document their natural environment, including animals and fauna (Guidelines 4.2, 4.3, 4.4). Nature and the environmental topics wound through regular discussions and activities, as evident after a storm when one class wrote an arborist about a tree at the school that needed care (Guideline 4.5). Working to strengthen nature connectivity is an ongoing part of environmental education that was also visible in the work of nature-based teachers studied by Assaf and Gan (2021).

The interdisciplinary activities of the teachers in this study incorporated all the developmental domains and learning areas while supporting curiosity, environmental learning, and a personal sense of caring and connectivity to the Earth and the outdoors. Social-emotional support was provided across the program, with the inclusion of mindfulness and nature-based yoga in each class (Guideline 4.1). Additionally, the teachers worked to keep children active and engaged in physical activities to support gross and fine motor development, while also fostering children's cognitive development and natural curiosity and questioning through the use of exploration, inquiry, and play (Guideline 4.6).

Spaces and Places

Prior to the pandemic, interactions with the environment occurred outdoors on school grounds and in classrooms where teachers brought nature indoors and incorporated it into classroom life (Guideline 5.1). These typical classroom structures no longer existed during the initial months of the pandemic. The nature of home-based isolation and lockdown forced teachers and families to connect through online venues where the distance between home and school was brought closer together. Programming was now situated in family homes, yards, and

neighborhoods, with school-based interactions mediated through online means. The result was a significant transformation in both instructional delivery and interaction style, from a singular location to a multiplicity of locations where the teachers, children, and families were physically separated and communicating through technology.

The mandated lockdown required teachers and families to isolate at home, yet teachers continued to connect children to nature by encouraging them to get outside and by bringing the outdoors inside. By interfacing through technology and windows teachers were able to connect classroom members across space and also connect the indoors with the outdoors (Guidelines 5.2, 5.3). These practices are similar to those used by environmental educators in Israel (Assaf & Gan, 2021). Additionally, teachers worked to connect children and families across their multiple locations through yard and home tours shared via Zoom and by coordinating online teacher-child and child-child playdates. Teachers also used nature to support mental and physical health, play, and exploration for both children and families (Guideline 5.1). These sentiments and the outdoor experiences are reflected in research on British preschool parents' approaches and perspectives on getting children outdoors during lockdown (Martin et al., 2023). Most importantly, throughout the process, teachers worked to meet families where they were, supporting their comfort levels regarding their ability to go outside or desire to stay indoors (Guideline 1.3).

The NAAEE Guidelines point to the importance of health and safety in the learning space and risk management (Guideline 5.5). Throughout the data, teachers' attention to the health and safety of learning community members was a clear reflection of the times and realities of life during the pandemic. The teachers provided instructions on keeping everyone safe through proper handwashing, social distancing, and wearing masks. Their attention to the health and safety of the children and families was reflected in their concern for families' physical and mental well-being as they shared mindfulness activities. The teachers consistently incorporated animal yoga into Zoom sessions and encouraged families and children to get outside, go for walks, connect with nature. Additionally, they worked to foster a sense of community. The teachers' concerns about the mental and physical health of children and families, is also reflected in other international research about teacher concerns during the initial months of lockdown (Atiles et al., 2021; Dayal & Tiko, 2020; Timmons et al., 2021).

Educator Preparation

The teachers' preparation as nature-based teachers, their environmental literacy, and knowledge of the foundations of early childhood environmental education are evidenced in the curriculum that they implemented (Guidelines 6.1, 6.3, 6.4). Throughout the lockdown period, the university laboratory school teachers continued to educate, support, and mentor 95 undergraduate students (early field placements, science buddies, human service interns, and student teachers) by engaging them in classroom teaching and team meetings. During these meetings, the teaching team examined their practice, evaluated outcomes, and worked to reinvent their instruction to meet the needs of children, families, and teachers (Guideline 6.2). This was necessary because remote teaching practices were new, uncomfortable, and antithetical to the teachers' beliefs and philosophies of DAP. Because they were working to reconcile tensions between remote programming and their commitment to high-quality, child-centered, and nature-based programming, discussions around the professional responsibilities of teachers were elevated (Guidelines 6.2, 6.5, 6.6).

Conclusion and Future Directions

Despite being separated by place and needing to communicate through remote approaches during the initial months of the pandemic, teachers addressed the NAAEE Guidelines (2016). The teachers retooled their practices and implemented remote programming through their strong commitment to DAP, relationships with families, environmental literacy, and connections to place and the local environment. Each teacher connected their curriculum across multiple locations through their strong use of nature, the environment, and natural materials and shared commonalities across the children's home environments. These practices illustrate teachers' use of environmental literacy as well as their ability to ground instruction in the shared contexts and lived experiences of the children. These efforts display teachers' commitment to nature-based teaching and their openness to explore and examine their practice and ground their work in the philosophical foundations of DAP and their local funds of

knowledge (Moll et al., 1992; Román et al., 2021). Clear practices emerged including a commitment to social and emotional learning, mental health, and physical activity. Teachers drew on existing classroom routines, structures and curriculum to buttress their efforts, provide a sense of consistency and coherence, and support children's participation. Additionally, by using the local environment as a curricular anchor, the teachers utilized each family's local context to engage children in a wide range of activities that connected them to nature and natural materials in active ways both inside and outside the home, or through windows or from the borders on porches or balconies.

As noted elsewhere, at the onset of the pandemic, early childhood teachers generally had the least technological teaching experience and the fewest support structures to aid them in facilitating the shift to remote programming (Aslan et al., 2022; Atiles et al., 2021; Barnett et al., 2020). Guidelines and professional development are needed should this situation arise again (Howard, 2024; Steed et al., 2022; Timmons et al., 2021). Although remote instruction is not viewed as DAP for young children, it would be prudent to provide teachers with tools to support children in future lockdown/crisis situations arise (Allvin, 2020; Atiles et al., 2021). This study could provide a framework to help educators more effectively and efficiently pivot to their teaching across multiple locations in developmentally appropriate nature-based ways or expand current programs to meet the needs of children unable to attend in-person nature-based preschools.

The strengths of this study include the robust and comprehensive nature of daily classroom data spanning five classrooms across three months of remote instruction in Spring 2020. Collectively, these data illustrate how teachers shaped their programming to incorporate nature within remote teaching contexts and the multiple localities of families' homes and neighborhoods. This study illustrates how teachers were able to implement nature-based practices within a context that differed from prior teaching experiences using approaches that were recreated for a specific situation. The limitations of this case study include its inability to generalize beyond the local context. Teacher communications for families are written for a specific audience; the data from this secondary dataset were not designed to document all curricular plans, and they provide only partial insight into the comprehensive activities of the classroom or teachers' rationales for their practice. Furthermore, the perspectives of the families were not reflected in this dataset.

Nothing can replace in-place nature-based education; however, this study offers insight into how one set of teachers created programming for families during lockdowns. These findings could illuminate possibilities for other teachers working with children who may not be able to access in-person nature-based programming (e.g., critically ill children, displaced families, crisis situations requiring isolation). It is possible that the place-based curricular approaches shared here could also help foster ideas that others can adapt to their local contexts.

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Appendix

Table 1: Key Characteristics and Supporting Evidence

NAAEE Guidelines (2016)	**Evidence**
Key Characteristic 1: Program Philosophy, Purpose, and Development	
Guideline 1.1—Focus on nature and the environment	"We persevered through it because we wanted to make sure that the kids were reminded that this still is a nature program, and we still wanted our focus to be on nature." (Staff meeting, Nature teacher)
Guideline 1.2—Focus on education of young children	Program studied was an early childhood program. The entire curriculum and focus of the school was on the support and education of young children. (Program documentation, staff meetings, emails)
Guideline 1.3—Culturally appropriate goals, objectives, and practices	Teachers were sensitive to family structures, time, resources and comfort with both technology and being outdoors. Zoom schedules were designed based on family availability and interests and menu of resources and activities were developed so that families could engage in whichever way they felt best. (Staff meetings)
Guideline 1.4—Environmental literacy: board, staff, and providers	"Your children have enjoyed hearing the songs of each of the birds that would frequent our window feeder, using the Wild Republic Audubon soft birds that we had in our classroom. I shared the American robin with your children last week as I read the story, "My Spring Robin" by Anne Rockwell. I have attached a website featuring more than 600 actual bird sounds. I hope your family enjoys hearing them!" (Email, 2s teacher)
Guideline 1.5—Health and safety	"I did put the nest into my freezer for a while to ensure that it was safe for me to touch." (Email, 2s teacher)
Guideline 1.6—Ongoing evaluation and assessment	Program is state-licensed and nationally accredited and conducts programmatic self-studies at least annually. (Program documentation)
Guideline 1.7—Partnerships	In effort to remain connected to larger global and national events and communities, the school participated in Earth Day events, the Week of the Young Child (NAEYC), and All Children Exercise Simultaneously (ACES) Day. Staff also used resources from professional organizations to support their practice. (Program documentation, staff meetings)
Guideline 1.8—Interpersonal and intergenerational relationships	"Maybe going on a walk to look for real bird nests in your community can provide a relaxed time for discussion of how and where birds build their nests…. Maybe it can be a family activity." (Email, 2s teacher)

Key Characteristic 2: Developmentally Appropriate Practice	
Guideline 2.1—Based on research and theory	"Windy Day - Have your child bring something to show the wind - This could be a pinwheel, a ribbon wand, a scarf, butterfly wings - anything that would help the children to see the wind." (Email, Nature teacher)
Guideline 2.2—Authentic experiences	"Attached is this week's newsletter, there are lots of fun activities your family can do to celebrate Earth Day on Wednesday! From creating art like Monet who was inspired by nature, to building forts, to going on a nature walk, there are many resources to look at." (Email, PreK teachers)
Guideline 2.3—Child-directed and inquiry-based	"We loved being able to check out Sam's Park! She was such a great tour guide as she shared where she likes to make "witches brew." (Email, Nature teacher)
Guideline 2.4—The whole child	"As the weather gets nicer, go on a nature walk and bring some paper and crayons. Try to draw what you see. Send us any pictures of what they draw!" (Newsletter, PreK Student teacher)
Key Characteristic 3: Play and Exploration	
Guideline 3.1—Use of the natural world and natural materials	"See the beautiful Northern Cardinal at my feeder here at home? What birds are you seeing and hearing while you are at home?" (Email, 3s teacher)
Guideline 3.2—Play and the role of adults	"We didn't take a lot of pictures but played in the yard, tried to fly a kite (no luck), and hung out. [We] also picked flowers from our yard and made ornaments." (Email, PreK parent)
Key Characteristic 4: Curriculum Framework for Environmental Learning	
Guideline 4.1—Social and emotional growth	See quote in Guideline 2.3 Child-directed and inquiry-based
Guideline 4.2—Curiosity and questioning	"The Spring trees are blooming and waiting to be explored. Do you have any flowering trees in your yard? Do you know what types of trees are in your yard? Do an investigation with your child." (Bloomz post, Nature teacher)
Guideline 4.3—Development of environmental understandings	"Can you find these signs of Spring outside? I did! 1.Buds on trees, shrubs, etc.... 2. Forsythia 3. Daffodils 4. A bird's nest...this is an old one 5. A robin" (Email, 3s teacher)

Guideline 4.4—Skills for understanding the environment	"We will be natural scientists to observe closely what's happening inside the eggs. We will also practice our observational drawing skills to document the growth of the eggs. Observational drawing is drawing what you see as realistically and as true to life as possible. It is a great exercise in seeing and exploring how all of the details interact. If your child (or you) would like to join us in doing an observational drawing, bring a piece of paper, a pencil or black marker with you. If you would like to include color in your drawing, bring crayons, colored pencils or markers." (Email, PreK teacher 1)
Guideline 4.5—A personal sense of responsibility and caring	"Be prepared! Your little Earth Guards can become quite passionate about this and how they can help to save our planet! Here are a few wonderful books that can further their interests…" (Email, 3s teacher)
Guideline 4.6—Physical health and development	"Happy Friday-- I am excited that this weekend's forecast calls for warmer temperatures and sunshine. I hope that you are able to spend some time outside moving, laughing and soaking in the sun." (Mindfulness Challenge #3, PreK teacher 1)
Key Characteristic 5: Places and Spaces	
Guideline 5.1—Spaces and places to enhance development	"Send me (via e-mail) a photo of your child in a WILD space either in their yard or beyond. These "beyond" spaces might be outside your fence or a state park." (Bloomz post, Nature teacher)
Guideline 5.2—Natural components	"One of my favorite activities is to lie down on my back and watch the clouds roll by. I enjoy looking up at the canopy of trees overhead, or just looking for birds and listening to their songs." (Mindfulness Challenge #3, PreK teacher 1)
Guideline 5.3—Comfortable for both children and adults	"Tuesday we will focus on Our Backyards, Balconies & Beyond - What does it mean to be a Nature Explorer, Earth Guard? We will draw maps so your children will need paper and a writing utensil." (Email, Nature teacher)
Guideline 5.4—Maintenance and usability	"I have a video to show them of some of the wind damage by our creek. My hope is that we can have the children help write a letter together to [University] Arborists for help in the cleanup process. Afterall, we are Earth Guards!" (Email, Nature teacher)
Guideline 5.5—Health, safety, and risk	"Our State Park system has remained open and is waiving entrance fees. If you do visit a park, don't forget - social distancing!" (Bloomz post, Nature teacher)

Guideline 5.6—Environmental sustainability	"Find materials in your house that you are not using anymore and repurpose them to build something new! Questions you might ask your child to help them think about…How do you know or decide if something can be repurposed (used again in a new way)?... Are we still using this material? Is it still needed? How do we know this material is ready to be repurposed? Is it safe to repurpose this material? How are we helping the Earth by repurposing this material?" (Email, PreK teachers)
Key Characteristic 6: Educator Preparation	
Guideline 6.1—Foundations of early childhood environmental education	"Our themes had to do with the different natural [phenomena] that we saw were happening at our houses." (Staff meeting)
Guideline 6.2—Professional responsibilities of the educator	As noted by the varying schedules and differentiated activities, teachers designed curriculum and instruction to align with the developmental and learning/social-emotional needs of the children and families in their class. Even when activities were shared across classrooms, they were adapted for the specific needs of class members."(Staff meetings)
Guideline 6.3—Environmental literacy	See quote in Guideline 4.3—Development of environmental understandings
Guideline 6.4—Planning and implementing environmental education	"Thursday - Nature Portraits…We encourage the children to collect various nature items before this meeting, but if they are outside, they can always add items as we create. We will make nature portraits together." (Email, Nature student teacher)
Guideline 6.5—Fostering learning	See quote in Guideline 5.6—Environmental sustainability
Guideline 6.6—Assessment and evaluation	After teaching each day, the teaching team (teachers, student teachers, and early field placement students) reflected on their interactions with children, the lessons, if/how children's needs were met and what changes needed to be made. (Staff meetings)