

Connecting with Nature: Using the Natural World to Support Children's Development Across Learning Domains

Beth Zack: Welcome to this episode in the "Front Porch Series." Thank you for joining us. The "Front Porch Series" is a collection of webinars that focus on current research and evidence-based strategies and practices for teaching preschool children. These webinars will introduce you to some of the research behind the Head Start Early Learning Outcomes Framework, or the ELOF for short. This presentation is intended for teachers, providers, administrators, and home visitors serving Head Start and child care programs. Today, we'll be joined by our guest expert, Renetta Goeson, later in the webinar.

I'm Beth Zack from the National Center on Early Childhood Development, Teaching, and Learning, the NCECDTL. My colleagues and I from I-LABS, the Institute for Learning & Brain Sciences at the University of Washington, will be presenting this series. I-LAB, a partner organization in the NCECDTL consortium, is one of the leading child development research centers in the country.

Today, I'll be sharing about a topic that I love and I'm actually experiencing firsthand with my own preschooler: connecting and learning with nature.

If it feels comfortable for you, I'd love to begin by having you reflect on this word, nature. What first comes to mind? Many of you likely thought of a forest, or maybe you thought of the beach or the desert. All of these are wonderful examples of nature, but nature is so much more than the trees and the forest. Nature is the birds chirping outside your window. It is puddles after the rain and tiny blades of grass popping out of a city sidewalk. Nature can connect us to our family, our community, and our culture.

I want to emphasize that everyone has access to nature. It's really all around us, but your experiences might look a bit different depending upon where you live, your interests, and your abilities. There are ways to connect all children to nature. This is true whether you're supporting families on home visits or working in a family child care or center-based programs. Most importantly, young children love to play and learn in nature, whether you head outside or bring the outdoors in. The nature is ... The natural world is full of learning opportunities, so let's jump right in.

Here is our learning objective for today. By the end of this webinar, you'll be able to use nature as a tool to support all children's learning. We'll focus on three areas to help us meet our learning objective. We'll begin by talking about the different ways we can connect with nature and what some of those benefits are. Then we'll talk about what the research says about how connecting with nature supports learning across the Head Start Early Learning Outcomes Framework, or ELOF, domains. And then finally we'll explore strategies for how you can support and increase children's connection with nature.

In this first section, we'll focus on how we experience and benefit from connecting with nature. This will set the stage for the rest of the webinar today.

We connect to nature through our senses. Our eyes, our ears, our nose, our hands, and our mouth. Well, they offer different ways to experience nature. This makes it accessible to all children, including children with differing abilities or those with disabilities or suspected delays. A child who cannot see a leaf can still feel its smoothness in the spring or crunchiness as fall changes to winter. They can hear the leaves rustle in the wind. Research shows that families of young children with and without developmental disabilities or delays spend similar amounts of time engaged in activities that connect them to the natural world, and these sensory experiences, particularly when they are child led, well, they make learning more meaningful and memorable to all children.

Today, I'd like you to think about preschoolers' experiences with nature that go beyond time on traditional playgrounds or outdoor playsets. So let's look at three ways that learning can involve nature. There's learning in nature, learning about nature, and learning with nature. So learning in nature refers to bringing an activity that you normally do indoors to the outside. Now, is that fresh air and time outside beneficial for all preschoolers? Absolutely, but that's not what we're going to focus on today. These activities don't actually require nature for learning to occur. Bringing an easel outside to paint or a drum to make music doesn't encourage children's curiosity and exploration of the natural world, but there are ways to transform learning in nature to learning with or about nature. You might connect art and nature by having children collect leaves, and then they can make color rubbings of the leaves using paper to explore those different patterns.

Learning about nature is exactly how it sounds. It's teaching children about some aspect of the natural world. That might be the changing seasons or what plants need to grow. This often begins as an adult-directed activity or a concept an adult wants to teach, but it doesn't have to. After discovering a bird's nest and eggs outside, children may have lots of questions about those eggs, and as a result you might find a book to share with the children about the life cycle of a bird, and then this might lead to more questions and more observations of the eggs to watch for the baby birds to hatch. As this example shows, learning about nature can happen inside or outside. Let's watch a short video example about learning about nature.

[Video begins] Teacher: Branches up in the air. Put your branches up. And you hear this little, tiny breeze coming from the ocean, so you're swaying your little branches. But the wind gets harder. [Shshshing sound] And the wind keeps blowing! [Shshshing sound] Keep your feet on the floor! Keep your roots on the floor! And there, it's even stronger! The wind is stronger! [Shshshing sound] And then it slowly stops. Did you see the wind moving you?

Children: Yeah.

Teacher: Did you feel it moving you?

Children: Yeah.

Teacher: We feel it, huh? Go like this. What do you feel when you do this?

Child 1: Air!

Teacher: Air.

Child #2: A little bit.

Teacher: It's a little bit of wind. If you go like this with your clothes, you feel it even harder! And today, we're going to be watching out for the wind when we go outside, OK? Good job, everyone. [Video ends]

Beth: This video is a wonderful example about how learning about nature, so in this case wind, can lead to learning with nature. The teacher found a way to let children engage their whole body, so they're swaying back and forth to think about and act what wind might feel like to them. She makes the leap from learning about nature to learning with nature when she says they're going to head outside now. They're going to look for that wind. This could've also happened the other way around. The children might have experienced wind outside first. Then this could've piqued their curiosity and interest in learning more about it, so questions like, "What causes wind?" or "Can wind form anywhere?"

And so this brings us to learning with nature, our primary focus today. This is what most children love, that hands-on exploration, not just hearing about the bark of a tree but getting to observe it and investigate it.

Learning with nature is an informal type of learning. Children connect with nature when they have the freedom to explore and experience it firsthand. Children are able to choose how they connect with nature based on their abilities and what feels comfortable for them. This makes nature accessible to all children, including children with differing abilities, disabilities, or suspected delays and children who are dual language learners. As I talked about earlier, children can focus on any one or at time all five of their senses to engage with the natural world. Let's watch another video example, this time of children exploring nature outside.

[Video begins] Boy: Oh, I found something! I found an ant! I found something! I found an ant!

Teacher: You found an ant? OK. Ready? Hold it. There you go. You can put it in my hand, and then we can look at it with the magnifying glass and see how big it looks. You can see his legs.

Boy: It's small.

Teacher: It is small, but do you see the legs?

Girl: I got one, too.

Teacher: Look at that.

Girl: The body.

Teacher: It's moving fast.

Girl: The body.

Teacher: It's moving fast.

Girl: I want to see it.

Teacher: OK. There it is.

Girl: OK.

Boy: It's too little. [Video ends]

Beth: What was one of the first things you noticed in this video? For me, it was that little boy's genuine curiosity and excitement at his discovery of this ant. He ran to show the ant with his teacher and his peers, and his teacher shared in his excitement. Then she provided support by offering a magnifying glass for the children to get a better look. She also described the ant and what it was doing, which supports language development. Learning with nature has many benefits and supports learning across the ELOF domains. Have you ever said, "I need a breath of fresh air" or felt better after going for a walk or a run outside? Being outside with nature can improve our mood. It can help us feel more focused and energized and improve our physical health and well-being.

Nature is also important to children's development in every major way: intellectually, emotionally, socially, spiritually, and physically. Connection with nature has many benefits, ranging from physical and mental health to exploring STEAM exploration. Let's look at one specific example. One of the ways that we could connect with nature is by growing our own food. Gardening is an amazing learning tool for all children, regardless of where they live or their abilities. And this might look like a home visitor bringing a few seeds, such as small carrots or herbs, to encourage a family to grow a single plant inside their home. It could be building raised garden beds on pavement in your outdoor learning environment, or you might have access to an area where you can plant right in the ground.

Research shows that children who grow their own food are more likely to eat fruits and vegetables. Now, that's a win. They have a better understanding of nutrition, and they're also more likely to follow healthy eating habits down the road. How else might growing or tending to a garden support children's development across learning domains? So in this photo from a family child care center, the child is picking corn and zucchini. He's practicing fine motor skills as he picks those vegetables, and he's engaging in positive interactions with the adult provider, which supports social and emotional development. By asking and exploring what vegetables need to grow, he's showing curiosity, and he's engaging in scientific reasoning. Counting and sorting the vegetables by color or type supports math skills, and these are just a handful of

examples. When we give children opportunities to explore nature, we help support their learning and development across the domains of the ELOF.

In this next section, we'll take a deeper dive into what the research says about learning from nature. We'll talk about how we can use nature to support all preschoolers' development of the skills, behaviors, and concepts that they need to succeed in school. All children vary in their needs, likes, abilities, interests, and backgrounds. We have to individualize our interactions and learning environments to best meet each individual child, including children with differing abilities, disabilities, or suspected delays and children who are dual language learners.

Remember, the learning environment could include outdoor space or bringing the outdoors in. Home visitors can work with families to help them think about ways to make more connections to nature in the home environment and the community, too.

The ELOF has five central domains for preschoolers. They are Approaches to Learning; Social and Emotional Development; Language and Communication, which is divided into Language and Communication and Literacy; Cognition, which is split into Mathematics Development and Scientific Reasoning; and lastly Perceptual, Motor, and Physical Development. I'm going to provide examples across the domains today, but really it's impossible to cover all the subdomains because nature can support every one of these in so many ways, and often at the same time. I encourage you to dive into ELOF more after the webinar. You'll find lots more on the ECLKC. Just search for ELOF, or you can also check out our Resources List widget for links.

So let's look at the Approaches to Learning domain first. It includes the subdomains Emotional and Behavioral Self-Regulation, Cognitive Self-Regulation, Initiative and Curiosity, and Creativity. I'm going to focus on the two self-regulation domains for this example. Self-regulation refers to children's ability to manage their feelings, all those emotions, actions, and their behaviors – for instance, controlling of impulses, focusing on a task, and waiting your turn.

Researchers have found that better self-regulation skills in 3- to 6-year-olds is related to their future academic success in math, language, and literacy, as well as overall well-being. But how does self-regulation relate to nature? Look at a recent study. They looked at whether the amount of children's access to outdoor learning environments is related to self-regulation skills in kindergarten. So multiple schools with diverse demographics participated, and each had two classes. Now, the first class, one class engaged in an inquiry-based curriculum in the outdoor learning environment daily. And then the other class, they engaged in the same curriculum but one time per week for an entire semester. This school has created more natural outdoor learning environments in areas that used to have pavement. They added grass, sand, or mulch, and they planted trees. These photos show some examples of the outdoor learning environments that they actually created. They also added nature-based elements, such as stumps and garden boxes. Classes also had access to natural areas in the community nearby, and teachers reported the amount of time children spent outdoors each day and throughout the study.

The researchers measured children’s self-regulation skills in two ways at the beginning and the end of the study. Teachers filled out a classroom behavior-rating scale, and children participated in a “Head, Shoulders, Knees, and Toes” task. So for that task, the researcher says the name of a body part. And at first, the child is supposed to touch the named body part, so “Head,” head. But then the rules switch. So instead of touching your knees when “Knees” is called, you must touch your shoulders. And when “Shoulders” is called, you have to touch your knees. Head and toes were switched, too. This task involves many self-regulation skills. Children must focus to adhere to those instructions, and they have to remember those rules and inhibit their impulses to touch the named body part when the rules are switched.

And so what did the researchers find? Well, children in that daily outdoor-exposure group, they showed greater improvements in self-regulation skills compared to children in the once-weekly group. In this particular study, this finding was true for girls. They also found that children who spent more time – more overall time – outside each week, they showed better self-regulation skills at the end of the study. And so why might this be the case? Well, one possibility is that that time spent exploring nature might help children replenish their mental energy. In nature, children are able to follow their own interests and their curiosity. They can use those big outside voices and release energy as they please. This might leave them better able to self-regulate by paying attention and following the rules – for example, increasing their attention span and staying on task during teacher-directed activities.

Self-regulation skills are an important factor in being successful in school. This research suggests children’s self-regulation skills benefit from spending more time outside connecting with nature. This can help children meet goals in the Self-Regulation subdomains of the ELOF. Those goals include following classroom rules and routines with increasing independence and demonstrating flexibility in thinking and behavior.

So now I’m curious: Have you noticed that the children in your care are better able to pay attention, resist impulses like getting up from their chair or waiting their turn after connecting with nature outside? Feel free to share your response using the Q&A widget. We’ll pause for just a few moments before moving onto the next ELOF domain.

One of the amazing things about natural environments is that they are always changing. There’s not a set way to interact with nature. Because of this, nature inspires creativity, and children’s imaginations are able to just run wild. Children’s freedom to choose and direct their own play in nature also affords more opportunities for cooperative play. Creativity is a subdomain in the Approaches to Learning domain, and cooperative play is a goal in the relationships with other children subdomain under Social and Emotional Development.

In this next study, researchers were interested in whether natural playscapes support more cooperative, constructive in-nature play. I know that accessibility to nature can be a concern, so I chose this next research study because it explores the benefits of transforming a traditional playground into a more natural playscape. As I share, please keep in mind that you don’t actually need to transform an entire playground as they did here to reap the benefits of adding more natural elements to your learning environment.

The researchers collaborated with a school to update a standard playground, and they replaced it with natural playscapes for children ages 4 to 8. These images are from the outdoor learning environment that they transformed. And so, the new playscape included things such as connecting paths, rock boulders for climbing, a water pump, a tree house, plants, and a butterfly garden. Now, that sounds like a place I would love to play. They added natural loose parts like stones and pine cones and pine needles and also manufactured loose parts, too, such as open wooden blocks. They observed and interviewed the children before and after they installed the natural playscape. Then they interviewed them again six months later. And when the outside had the traditional playground, children used the pathways for activities such as riding tricycles. With the new pathways connecting the different natural areas, the children worked together to gather and move loose parts between them. So, for example, the researchers describe the children moving the wood blocks into the tree house to use as furniture. They collected pine needles for cooking. They used objects or materials to represent something else during play. This is an indicator for the goal, “Child uses imagination in play and interactions with others,” under the Creativity subdomain within Approaches to Learning in the ELOF.

The outdoor learning environment had a standard sandbox at the beginning, shown on the left, and they transformed it into a larger sandpit with blocks and a water pump, which is shown on the right. Now, children primarily used that standard sandbox to fill and dump buckets of sand, but they weren’t really working together or acting out scenarios. But after they put that new sandpit in, researchers observed the children cooperating and building together to meet shared goals. For instance, they transported loose parts from other areas, and they built streams and dams together. Through these interactions, children discover shared interests and build friendships. Children engaged in more sustained cooperative or constructive play in the natural playscape.

Cooperative play is a goal in the Social and Emotional Development domain of the ELOF. The findings of this observational study suggest that more natural environments support children’s development in key areas, such as creativity and cooperation. Language and literacy are probably not the first things that come to mind when you think of nature. But when children play in and connect with nature, they have lots of opportunities to practice whatever language or languages they are learning in a meaningful way. The words become meaningful through children’s hands-on experience. This is especially true when they have a chance to follow their own curiosity and interests.

As I mentioned earlier, nature is constantly changing. This constant change inspires a rich variety of vocabulary words and concepts beyond what children might learn in a classroom or indoors. And so in one study, researchers looked at the vocabulary caregivers and their 3- to 5-year-olds used in two settings. The dyads explored either a city park or an indoor nature center together. And what they found was that caregivers who explored the park with their children, well, they used more diverse nature words with them. And those children who explored the park also produced a greater variety of nature vocabulary, too, words such as, “swan” and, “sticks.”

These findings suggest that direct experience with nature is a great way to support preschoolers' language development. This supports the goal, "Child understands and uses a wide variety of words for a variety of purposes," in the Language and Communication domain of the ELOF. And, adults have an important role in supporting all children's language development as they connect with nature, including children who are dual language learners and children using a tribal language. You can further support them by describing what the child is observing, asking questions to support their thinking, and providing key terms in English and their home language.

Children's vocabulary development is also related to their literacy skills. Children need to understand the meaning of words to understand the content as they read. Research shows there is a strong relationship between children's vocabulary knowledge and their reading skills. Beyond vocabulary development, children also engage in nature-based activities that support their literacy skills. They might show phonological awareness by saying, "Squirrel, sticks, and shade all start with S." They demonstrate alphabet knowledge when they notice that two tree trunks form the letter V, or they might explain that caterpillar starts with the same letter as their own name.

It's important to note that some children have home languages that may not have a written form or may use nonalphabetic writing. In this case, we would not expect them to show this type of phonological awareness or alphabet knowledge in their home language.

Storytelling is another important part of literacy development. It's also one way that many people make the connection between nature, their culture, and community. I want to highlight one goal in the Literacy domain of the ELOF, "Child demonstrates an understanding of narrative structure by telling or retelling of stories."

Our guest expert will talk a little bit more about this soon, but let's move onto the Cognition domain. As you might recall, it's split into Mathematics Development and Scientific Reasoning. Math includes subdomains, like Counting and Cardinality and Measurement. Scientific Reasoning includes subdomains like Scientific Inquiry and Reasoning and Problem-Solving. The natural world supports learning in both of these domains. Children begin developing science and math skills and concepts from birth. They're like these little scientists that learn through hands-on experience and exploration by asking questions, finding patterns in the world, and collecting data. And so, for example, "When I play outside in the snow, it doesn't melt if it's cold out, so that must be a rule about how water acts in our world." And it turns out, children spend a lot of time exploring math and science concepts in building those skills while they play in nature.

So let's look at one last observational study where teachers observed preschoolers and kindergarteners as they played in their outdoor learning environment. They found that in 100% of their observations, children naturally engaged in activities and exploration that support their developing math skills. Children talked about classification, the relationship between sizes of objects, and measurement the most often in 60% of those observations. The children classified everything from time of day to animals and trees based on attributes such as color, size, and

type. They also physically compared things like height, weight, length, and distance between objects. Children use natural materials to create props, such as a teepee-style structure. They needed to build it with the right angles to remain upright while also having enough space to fit their bodies inside. That's math and engineering skills. Teachers observed the children using other math concepts, such as patterns, estimation, and sequencing. Children used math vocabulary and tools, such as rulers and thermometers. These skills meet many goals within the Mathematics domain of the ELOF including, "Child identifies, describes, compares, and composes shapes."

These examples show the children were also using creativity, problem-solving, and scientific reasoning as they played in nature. In fact, children talked about or used science skills during 65% of their observations. Children observed things such as animals' behaviors and how the environment changes with the seasons. They had hands-on experience, exploring things like sound, temperature, plants, and bugs. Through these hands-on experiences, children understand and engage in the process of scientific reasoning. Children engaged in activities that meet many goals within the Scientific Reasoning domain of the ELOF. For example, "Child observes and describes observable phenomena (objects, materials, organisms, and events)." These findings support the idea that nature is an authentic context for learning math and science skills.

The last domain of the ELOF is Perceptual, Motor, and Physical Development. It includes the subdomains Gross Motor; Fine Motor; and Health, Safety, and Nutrition. Nature presents so many opportunities for children to practice gross and fine motor skills as they explore and move their body through the environment. It takes a different kind of motor planning for children to navigate natural settings compared to a playground that they know and experience often. Out in nature, the environment is constantly changing, and we need to adapt our motor skills to meet these changes.

Children practice fine motor skills when they use tools such as rulers or tweezers to pick up a treasure they found or to water a plant or vegetables in a garden. Adapt tools for children of differing abilities, including those with disabilities or suspected delays and those with physical limitations who might select larger tweezers or a watering can with a smaller handle to make it easier to pour. Using tools supports a goal in the Fine Motor subdomain of the ELOF, "Child demonstrates increasing control, strength, and coordination of small muscles." Children practice balance and build core muscles as they walk across a log or practice walking on smooth versus bumpy surfaces. They show strength and coordination of muscles as they run and climb trees and transport materials. They use perceptual information to judge leaping from rock to rock or stepping from grass onto an icy sidewalk. These gross motor activities support the ELOF goal, "Child demonstrates control, strength, and coordination of large muscles."

When children explore nature, they experience the world from a different perspective. The top of the hill looks different when you're about to run versus roll or scoot down. You might notice something new if you lay down and look up compared to sitting on the ground and looking around. All of this experience in the outdoors is good for children's eyesight, too. Research

shows that young children who spend more time outdoors have lower rates of myopia or nearsightedness.

We also know there's a relationship between outdoor play and physical health. So in a study, researchers looked at nearly 3,000 children across Head Start classrooms. And they found that more outdoor playtime was associated with lower BMI, body mass index, from the beginning to the end of the school year. The more children played outside, up to 60 minutes, the more their BMI decreased from the beginning to the end of the year. Children's physical activity and healthy eating also relates to better cognitive outcomes during early childhood. Earlier in the webinar, I talked about the benefits of children helping to grow their own food. They're more likely to eat more fruits and vegetables and make healthy eating a habit when they help out. And this supports the ELOF goal, "Child develops knowledge and skills that help promote nutritious food choices and eating habits."

We've covered a lot of examples about how research in the ELOF support young children's learning from nature, and there are so many more. But I'd like to spend the rest of our time together today talking about the strategies you can use to help families and the children in your programs spend more time connecting with nature. And as we talk about strategies for making more time and space to connect with nature, I'd like to focus on three interconnected areas: the learning environment, materials, and our role as adults and caregivers.

To get us started on this area thinking about strategies to connect with nature, I'd love to share a video from our guest expert today, Renetta Goeson. Renetta has been working in the early care and education field for over 25 years, including 20 years with Head Start as a teacher, director, and more recently an early childhood specialist for Region XI. She is passionate about nature-based learning and infusing culture and language into outdoor and indoor learning environments. Renetta has some wonderful tips to share on her experience helping children and families connect with nature.

Renetta Goeson: [Speaking in native language] Hello, my relatives. My name is Red Buffalo Woman, and I am Dakota. My English name is Renetta Goeson, and I am a senior training and technical assistance specialist for the National Center on Early Childhood Development, Teaching, and Learning, and I'm happy to be here today.

In my heritage language of Dakota, "mitakuye" means "all my relatives." But when we say, "my relatives," it doesn't just mean the people that you're related to, for example, your parents, your siblings, or your grandparents. "All my relatives" refers to all of creation, and in my Dakota culture, like many other First Nations, culture and cultures, everything has a spirit. So the trees, the animals, the earth, rivers, lakes, and oceans, everything on Mother Earth has a spirit, and we're all related. One cannot exist without the other, and we want to have the utmost respect, or "waohola." And this is one of the most important values in our indigenous teachings.

What does this mean for early learning, education, and connecting with nature? Well, in the early childhood education, we have this amazing opportunity to design indoor and outdoor learning environments that are like no other place on Earth. So, these intentionally planned

environments can focus on natural elements that are important to our communities. Now, there's opportunities to expand learning and build upon a community of learners. And one example of how you could do this is by planting some indigenous plants and fruit-bearing bushes. So maybe you plant some corn or some chokecherry trees. And children can learn to care for these plants in their outdoor learning environment, and maybe they're going to measure their growth and expand their knowledge about how things grow and have that experience of caring for these plants as they grow. And then when harvest time comes around, this might present an opportunity to share with families on how to prepare traditional meals using the foods that the children have so carefully cared for, for many, many months.

Then you can also expand by learning the heritage language throughout your indoor and outdoor environments and describing features such as the sky, the earth, the grass, the trees. All of these things, you can incorporate a heritage language and explain how things work within the environment. So when you design intentionally planned-for environments, you could really incorporate some of the indigenous plants, as we have described ... I talked about earlier, like the corn and the chokecherry trees. And children can really engage with these plants and learn the difference between the leaves and what different kinds of trees and leaves look like and maybe compare and measure. All of those things can add to a very rich learning experience, and that's what we want for children everywhere. And we can also engage the families. Maybe some of the families are not aware or can't identify some of those plants. So they would be learning these things, too, right alongside the children. And also maybe inviting some of the elders who have that knowledge about these plants or things in nature and how things are connected. So when you invite everyone to be part of your natural environment, everyone has ownership of it, and it becomes this beautiful community of learners in that way.

And another thing you could do, if you're learning some of the legends or the stories that are important to your community, how can you engage that in outdoor play as well? So maybe you're telling stories about, let's say, a turtle or maybe the fox or another animal. Well, how do we engage them outside with that kind of stories that they've just heard? Maybe you play a game or you make up a game or you pretend play in some way. But in that way, you can make those things come alive and expand out into the outdoor learning environment in nature. So that's just another idea of what you could do to engage children in that extended learning that we ... And it makes it more meaningful that way.

So as early childhood educators, you have this awesome responsibility to engage children through intentional planning and open up all these opportunities to scaffold learning by tapping into their natural curiosity and their interests. You also have the opportunity to take parents on this journey with you. And when you do that, you increase their indigenous knowledge and their heritage language, and then you also can engage the elders. So have fun building your spaces that are like no place else on Earth that are special to your community, and thank you for allowing me to be part of your day today.

So [Speaking native language] and [Speaking native language] Thank you, and have a good day. See you later.

Beth: It was wonderful to hear Renetta's perspective from the field. Renetta will be joining us for the live Q&A portion at the end, so please submit any questions you have for Renetta through the Q&A widget. This is a nice lead-in to our final section.

Let's start with the learning environment. You might have heard the learning environment described as a third teacher, and I think this quote nicely sums up the role of nature: "If the environment is the third teacher, there is no better classroom environment than the outdoors." This is because of the rich learning experiences that nature provides. No tools or extra materials are necessary, although they can be fun and helpful to add when you're exploring the natural world.

It's important to view the outdoors as a learning environment just as you would the classroom. Viewing the environment as a third teacher doesn't mean that learning has to take place outdoors. Exploring a forest or visiting a farm or even a park are wonderful learning environments, but there are ways to connect children with nature at home, in the classroom, or in their neighborhood. Sometimes this means bringing the outdoors in. There are simple ways for this connection to happen on a home visit. Encourage a caregiver and child to watch a sunset or the snow falling outside their window. Support them in growing a plant together inside or out. It's all about finding ways to connect with nature based on the resources and the nature accessible to you.

So let's talk about what to look for in materials to help children connect with nature. Think about incorporating materials that are based on children's interests, include natural elements and man-made tools, as they have a place and connection with nature, too. And of course, there's those open-ended loose parts. Let's look at each of these.

Think of natural, nontoxic materials to bring into the learning environment or on a home visit based on the interest of the child: anything from sticks and pine cones to dandelions or leaves. This could even be a book as an introduction to a new topic on something about nature. Keep in mind, children might need or want to join in different ways. One child might need to listen to observe, where another child might use touch or their eyes to look for those birds, bugs, or the leaves rustling in the trees. Supply tools like magnifying glasses or ropes to use with natural materials, such as pine cones or seashells. It encourages children to innovate with the natural materials. This is another way that you can be intentional about connecting with nature and culture. Talk to families about natural elements that are important to their culture. Brainstorm ways to incorporate them in the learning environment. It could be through storytelling, art, or exploration.

Exploring in nature is naturally open ended. When children use their imagination, a tree can be a giraffe or a ship. Leaves can be pretend pancakes for breakfast or a bed or a book. Natural materials come in different shapes, sizes, textures, and colors to explore, and they often change with the seasons, which can extend children's imaginative play and learning. Open-ended materials can also be objects like these wooden blocks. Remember, they sparked preschoolers' creativity and cooperation in that natural playscapes study I shared. Provide a diverse array of loose parts for children to explore. Loose parts promote creativity and problem-solving,

engineering, math, and inquiry skills. You may collect materials from outside, then bring them into the classroom or home visit for an art project to further the connection to nature. Loose parts can even support children's alphabet knowledge and writing. Let's see this in action.

[Video begins] Teacher: You did the M! You went up and down and up and down, just like your M.

Girl: Yeah!

Teacher: What's next?

Girl: I.

Teacher: An I. There's lots of things you can use for the I. [Video ends]

Beth: This adult played a supporting role. She described how the child made an M and asked her what letter came next. When children are exploring nature, it can be a great time for adults to remain available while providing space for children to follow their own curiosity and interests. Even when children are playing independently, an adult can observe their play and their conversations to inspire future activities and questions. It's all about striking a balance between observing from the sidelines and supporting children's curiosity, questioning, and peer interactions. If you step in at the right moment, you have an opportunity to further a child's thinking and their learning. This is especially true with the language you provide. Through our conversations with children, we can introduce STEAM and basic inquiry skills. We can foster a problem-solving approach. Ask open-ended questions. It could help children reflect on what they were trying to do, whether what they have tried has worked or not, and how to plan their next move. By asking questions, you are modeling a questioning mind, exposing children to new language, and giving them a chance to respond in different ways.

On home visits, you can model questioning for not only children, but caregivers, too. Sometimes both the adult and children can achieve or understand more when they think out loud together. And children continue to build their vocabulary, and their experiences become more meaningful when we provide the scientific names and concepts for objects and events they uncover as they connect with nature. Using intentional language extends and enriches scientific experiences. It reinforces the growth of STEAM content knowledge. You can further support children who are dual language learners by describing what the child is observing and providing key words in English and their home language.

When you look outside and see light rain falling or large puddles forming in your outdoor learning environment, what comes to mind? Do you see that rain and those puddles as an obstacle keeping you from going outside or a material to explore by jumping right in and making a splash? Our own curious mindset and positive attitude about nature could have a strong influence on not only the children in our care, but their families, too.

Going outside isn't always easy. We have our own levels of comfort, and access to the outdoors can be limited. I know getting children outside can be difficult and time-consuming, and some people live in climates that don't invite outdoor play during certain parts of the year. When this is the case or you're not quite comfortable with getting too messy yet, consider bringing outdoor material inside. Snow is wonderful outside or in. You can add it to the sensory table. Same with crunching leaves in the autumn on a path in the woods – well, that's wonderful, too. But you can also crunch them on a nature table inside. Putting snow in a large bowl or the sink or a bathtub indoors is a great tip for home visitors to share with families, too.

Still, if you can, I urge you to help your children explore natural materials in the outdoors. Children often love being outdoors, and the material engagements that can happen there often can't be done inside.

I've shared a lot today about ways to connect with nature to support children's learning. Before we wrap up, I want to share one last video of a teacher exploring roly polies in their classroom.

[Video begins] Teacher: Yesterday during small-group time, we went outside to look for the roly polies. Remember?

Children: Yeah.

Teacher: Where did we go find the roly polies?

Girl 1: In the grass.

Teacher: The roly polies live in the dark wet moist areas. How do you know that?

Girl 2: Because they live under the dirt.

Teacher: Because it lives under the dirt. Yes, and under where it's dark. Today we're going to observe our roly polies, so we're going to use our senses to find something out. We may use our eyes to look at the roly polies, or we need to touch them to find out what it feels like.

[Video ends]

Beth: I love this activity and video for so many reasons. It was based on children's observations and their interests exploring nature. The teacher designed this indoor activity to extend children's learning. They used art to document their observations from outside. They used their senses to learn about the roly polies, and they practiced using tools, such as magnifying glasses. The teacher used diverse vocabulary such as "moist" to describe where roly polies live and scientific terms like "observe" to support their language development. This is just a beautiful example of using the natural world to support children's development across learning domains.

I'd like to end with this quote: "Nature is a tool to get children to experience not just the wider world, but themselves." I hope you keep this in mind as you take the ideas and knowledge we shared today. Think about all the benefits connecting with nature has for children across their learning domains. Learning extends beyond the classroom. Make connections between the

outdoors and the indoors. Nature can be enjoyed and explored anywhere. Use nature to create a love of learning, inspire curiosity and questioning, and make meaningful, joyful connections for the children in your program.

Thank you, again, for joining me and Renetta this afternoon. Take care, and have a great rest of your day.