

## Little Scientists: Exploring SCIENCE with Infants and Toddlers

Treshawn Anderson: Hi everyone and welcome to our first episode of "Teacher Time" this season. I'm Treshawn Anderson, and I'm from the National Center on Early Childhood Development, Teaching, and Learning, and I'm excited to be here today to talk about exploring science with infants and toddlers. Joining me today is Judi Stevenson-Garcia.

Hi, Judi. Can you tell us a little bit about what our viewers can expect on "Teacher Time" this season?

Judi Stevenson-Garcia: Hi Treshawn, and hi everyone. Welcome to another season of "Teacher Time." We're so happy to have you with us this season. We're going to be exploring different components of STEAM. Have you heard of STEAM? If you have, you might know what the letters are for. Say it with me — science, technology, engineering, the arts, and math. And so, what we're going to do is, we're going to spend individual episodes focused on the S, T, E, and M, and then, throughout every episode, we are going to take some time to talk about how the arts really can support children in exploring their world, solving problems, being creative, and sharing their unique thoughts and ideas with us.

Also, as we do every season, we're going to dedicate four episodes to thinking about how we can support infants and toddlers in their exploration of STEAM concepts. And then, we'll spend four episodes talking about how we can support preschoolers in doing the same thing. We would love to have you with us for every episode, but you may just decide to come join us for the episodes that are focused on the age of the children that you work with.

Treshawn: Thanks, Judi. It sounds like this season is going to be so exciting. And you know what? As a way to celebrate our theme this year, our team has sent every education manager a STEAM celebration box. And this box contains resources that will help support you in using STEAM all year long. And you know what? We had a lot of fun pulling together these helpful resources, and really added some fun things to the box, as well.

So, if you haven't seen the box yet, ask your education manager about it. And if they haven't seen it yet, just know that it's on its way. You know, we'll also post the STEAM celebration box materials in a special folder on MyPeers, so you can access it there. Also this season, we brought back our Q&A facilitator, Jan Greenberg. Hi, Jan. She'll be here to answer any of your questions that you ask through the purple Q&A widget.

And also this season, we brought back one of our guest experts from last season, an original "Teacher Time" host, Gail Joseph from the University of Washington. And she'll be here each month to talk about learning experiences and activities that you can do in your programs. Who doesn't like a good takeaway?

Judi: That's great. I know I love a good takeaway, so it's going to be exciting to see what Gail has for us today. I want to remind you that, at the end of the episode, we'll give you a link to an evaluation form. Please fill out the evaluation. We promise to use the feedback that you give us to help improve our future episodes. And once you complete the evaluation, you can download a certificate of completion for your participation in today's webisode. And remember, if you're

watching this along with some colleagues, maybe on the same computer, if only one of you registered for the webinar, you can share the evaluation link with your colleagues, and then, once they complete the evaluation, they can download a certificate of completion, as well.

Treshawn: Before we begin, I'd like to go over some information regarding the webinar platform, as we'll be using some of the features here on this episode. At the bottom of your screen, you'll notice these widgets. If you have any questions during this episode, you can submit them through the purple Q&A widget, and we'll try to answer your questions before it's over. A copy of today's slide deck, and additional resources, are available in the green resource widget, and we encourage you to download any resources or links that you may find useful.

Lastly, you can find additional answers to some common technical issues located in that yellow help widget at the bottom of your screen. Each of these widgets are resizable, and they're movable, for a customized experience just for you. Simply click on the widget, move it by dragging and dropping, and resize using the arrows at the top corners. Finally, if you're having trouble, try refreshing your browser by pressing F5 on your keyboard. And be sure to log off of your VPN and exit out of any browsers that you may have open.

Judi: OK. Finally, we have changed up our viewer's guide a little bit, so if you haven't downloaded yet, please download the viewer's guide. We've designed it to really go along with our episode, and so, you're going to need it to participate. We have space there for you to write down some reflections, and to record some ideas and strategies that you want to try. So, please take a minute to download that now. OK. Let's get started.

Today, we are going to discuss the S in STEAM, which is science. And you may ask yourself, "Why is it important for infants and toddlers to explore science ideas?" As teachers and family child care providers, it's really our responsibility to make sure that we are offering children opportunities that support their growth and development across all learning domains. So, when you think about that, we think about the Early Learning Outcomes Framework, right? Or the ELOF, as we like to call it.

When we support children's growth and development in science, it actually helps them in all areas of the ELOF, but especially in approaches to learning, cognition, and perceptual-motor, and physical development. So, as we go through the episode, think about how the strategies that we mention and the ideas that we mention are going to support your goals for children's growth and development in all of the ELOF domains.

Treshawn: Science includes the use of inquiry skills, such as observing, asking questions, exploring, making predictions, and analyzing or using information to understand how the world works. You may not think infants use inquiry skills, but stop and think for a minute. You may be watching an infant playing with a rattle, and what happens? They shake it. It makes a noise. And when they don't shake it, well, it doesn't make a noise. And this is the infant exploring the scientific concept of cause and effect.

Now, older infants and toddlers may spend more time exploring the textures and shapes of, maybe, leaves in a sensory table or outside, or they may notice that leaves change colors, and that they feel different in the fall. This is also scientific inquiry. Research shows that children have a natural sense of wonder and a natural sense of curiosity about the world around them.

And as you set up planned learning experience throughout your day with infants and toddlers, you can describe what you are doing, and how they are interacting with the materials that you shared with them. Teachers and family child care providers should ask children what they think will happen next, or talk about similarities and differences, and identify scientific concepts children are exploring.

And while infants and younger toddlers may not be able to ask questions yet, or respond verbally to yours, if you observe them closely, you can see what kinds of things they're interested in exploring. You can also see how they respond with their attention and focus, and their vocalizations and movements, to what you are saying and asking. These interactions help infants and toddlers begin to understand their world, and encourages them to explore. For example, when infants and toddlers observe a new object in their environment, like red food coloring in water, they tend to stare at it a little bit longer, and play a little bit longer at the experience, trying to make sense of their world.

So, we're going to watch a video of a teacher and her infants and toddlers exploring avocados. Now, you may be thinking, "Science, avocados, how is that related?" Well, let's watch and see. Use your viewer's guide, that you downloaded in the green resource widget, to write down, in box one, the ways in which you see this teacher supporting science-related skills, and what questions the children might have as they explore. Let's watch. [Video begins]

Woman No. 1: Should we make a discovery? Should we check and see what's inside the avocado? Huh? What do you think is in here? What do you think is inside? Inside the avocado. Andrew, you're working on getting inside the avocado. Andrew is opening up his avocado. Let me see, friends. Oh. You are experimenting with rolling your avocado because it's so round. You too, Mia? You going to roll it around the table? Hmm? You helping Mia with your fork? You want me to roll your avocado? Hmm? Let's see. Do you want to try and open another avocado? Let's see if I can help you. Child: Ah.

Woman No. 1: Ah. You're taking out ... You have dark green on the outside of the avocado, and light green on the inside of the avocado. Yeah, you're eating it. How does it taste? How does it taste? [Video ends]

Treshawn: This is such a great video, and honestly, it's one of our "Teacher Time" favorites, because it shows so many practices that are effective at supporting infants and toddlers in their science exploration. So, we're going to give you one "Teacher Time" minute to write down in box one of your viewer's guide your thoughts on the science skills that you observed both the teacher and the children doing in this video. And when we come back, we'll share what we observed, too. Go ahead. Take a minute.

So, how was your "Teacher Time" minute? Well, this season we're doing something a little different. We're giving you time to reflect on the information that we're giving you. So, be sure to download your viewer's guide in the resource tab, so that you can follow along with us. Now, here is what we observed about this avocado video. Well, first, there's clearly an observation.

So, the children held the avocado, and they rolled it, and they poked it, and they threw it. And the teacher talked about the children's exploration. So, they were really observing the avocado, and she was observing the children's behavior, and would tell them, "You're experimenting

with your avocado." And also, she asked questions, and she, you know, asked the children to make predictions. And although the infants were too young to talk, she still engaged them in this scientific inquiry. She asked them to make predictions like, "What do you think is inside of the avocado?"

And even more verbal toddlers may not be able to answer you verbally, and may not know many scientific ideas, but you can be encouraged to observe, and think, and hypothesize with them, and make guesses. And then lastly, she really analyzed, and used her information. She included science when she mentioned the avocados round shape that helped it to roll. So, she's using the information that the children are gathering about the avocado, and really helping it to make sense to them, as well.

Judi: That was such a great example of toddlers engaged in scientific inquiry. So, let's take a few minutes to think about how you can create a learning environment that supports infants and toddlers in exploring science ideas. So, here are a few steps you can take. First of all, you want to have an engaging learning environment. We're going to break that down just a little bit for you, so you can think about what that means. Also, you want to provide nurturing, responsive, and effective interactions. We saw that happening, right, with that avocado video. And then, finally, we want to make sure we're providing science-related learning experiences and opportunities for our young children. So, let's get started with the learning environment, making sure that it's engaging for young children.

When you think about an engaging environment, it's going to be interesting, and stimulating, and it's going to encourage exploration and experimentation. So, this includes three things — your materials should be open-ended, there should be a variety of them, and they should be accessible. So, let's talk first about open-ended. What does that mean, to have open-ended materials? Basically, it's any material that really doesn't have a prescribed purpose, that it's accessible to children, and allows them to explore it in whatever way they're interested in. So, for example, maybe cardboard boxes or cardboard tubes. Those are kind of a favorite thing that my kids love to use when they're exploring. They can stack them. They can fill and empty them. They can roll cardboard tubes, or fill them up, And those kinds of things don't offer only one opportunity to explore. It offers many opportunities to explore.

You might also want to think about maybe having just a small basket or bucket filled with materials that have different textures, maybe — sandpaper, or soft cotton, or flannel, or maybe some bubble wrap, so that children can kind of feel them, move them, stretch them, or pop them as they're interested in. Another great thing that I think all of you probably use with your infants and toddlers, at least occasionally, is water play. And what a great opportunity to take that first step, and to really encouraging children to explore scientific ideas. It's something that they're already familiar with probably through their own bath time at home. They may have experienced pouring water in and out of cups, or playing with sudsy bubbles. And so, offering them a material that they're already familiar with allows them to kind of build on what they already know and have experienced with water.

So, in addition to that, having that context of a familiar material also really supports children who are dual-language learners, who are now going to be exploring materials and looking for support in their home language. So, whenever possible, if we can be close with infants or

toddlers — if you or a colleague speaks their home language — to talk with them in their home language as they're exploring can really have a lot of meaning for children who are dual-language learners.

OK. So, the second thing is, we want to have a variety of materials. If you work with infants and toddlers, you know that, sometimes, there's, like, a popular toy that everybody wants to play with. So, sometimes it's good to have a few of the same toy, so that children are not going to be fighting over a popular toy. But in addition to having multiples of popular toys, we also want to think about having a variety, so that children have lots of different opportunities to explore different concepts. And also, especially for our young children, they're really learning through their senses — so, through their sense of taste and smell and hearing, and through sight and touch. And so, offering them materials that help them explore and use those senses to explore is a great idea.

So, you could have things like flashlights, or if you're going to use a water table, bubbles or ice cubes. You could have scent jars that have, you know, some cotton balls in there with a scent that children can use to smell. And definitely, you want to use books, right? Sometimes, there's books that you can get that have different textures on them, or they include pictures of animals in their environments. All of those things will really bring science ideas to life, and keep your children engaged in what they're discovering.

One strategy that you can use to make sure that you have materials in your environment that are interesting to young children — the children that you work with — is to ask families to bring in some materials or toys that they maybe use at home, maybe just some materials that they use in the kitchen, like a certain kind of whisk or a certain kind of pot, or maybe if they use some kind of gardening material. Anything that the children are used to and familiar with will encourage them to engage.

And at the same time, when you have those materials representing the different families in your class, or in your family child care home, then, you are representing their cultures, and what's valuable to their families, which is a great way to support children and their families in engaging in the environment. OK. Then, the last piece of the engaging environments is to make sure that our materials are accessible to all children. So, everyone we're working with should have easy access and be able to use the materials that we have.

So, that makes me think, first of all, especially if you're working with young babies, you want to make sure you have some low, open shelves so that they can get to, and reach materials independently. And if it's needed, you want to make sure that you're adapting materials, or adapting the spaces that you have so that children can easily access the materials — especially children who might have special needs. We want to make sure that they're participating as independently as possible.

So, for example, think of a water table. We've been talking about water a lot. So, if you have a water table, but you have some children with mobility issues, you might want to make water accessible in a different way, maybe with a smaller bucket at a table. Or you will want to make sure that your table that you have is wide enough and sturdy enough so that a child can use the table for support if they need it without worrying about the table moving. For younger infants,

we still want to engage in water play with them, but sometimes, a water table is not accessible to them. So, we can have a smaller bucket, or maybe a flat tray with just a little bit of water for them to splash and explore. And sometimes, you might have a baby who likes water play, but maybe doesn't like being wet — which is common.

So, you could still help them enjoy the experience, maybe by sitting close, and making sure you have a towel, so you can wipe water if they get it on their face, or on their hands. All of these approaches will really make sure that all children in your classroom have access to materials that encourage them to think scientifically.

Treshawn: Wow, Judi, these are really great points. So, you know what? Let's watch a video of a teacher and her toddlers exploring water. But beware, it gets messy. But it's also a lot of fun. And as you watch, look for open-ended materials, and materials that are varied and accessible for all children.

[Video begins]

Woman No. 2: [Speaking Spanish] ¿Quieres mas agua? ¿Si? Mira. [Inaudible] Mas agua para ti. ¿Quieres mas agua, Victor?

Girl: [Inaudible]

Woman No. 2: Good. Oh, you want to put the water in here? Yes? It's coming. Oh. It's coming. Look. [Speaking Spanish]: Uno, dos, tres. Arriba. Quieres mas? ¿Si? ¿Quieres mas agua? OK. [Speaking Spanish] Aqui. Alli. Mira. Aqui. OK. Pon la manguera asi. [Speaking Spanish]: Alli viene el agua. OK.

[Video ends]

Treshawn: What a great video of such an engaging environment. The environment included materials that were open-ended, varied, and accessible — sand, water, buckets, the water hose, and most of all, the children were allowed to get as messy and engaged as they wanted to. In this full-body science experience, children were able to explore the properties of sand, and how muddy it gets when it's wet, the cause and effect of pouring water down a tunnel and coming out the other end. And they were also able to explore the water hose, and even see where the water comes from.

This is an opportunity to talk with parents, too, about the value of messy play, and having some extra clothes on hand — since, you know, there are scientific gains that children make when they're allowed to explore freely, and that can sometimes outweigh the cleaner, more controlled play experiences.

So, in box two of your viewer's guide, write down some of your favorite open-ended materials, and maybe add some things you want to add to your wish list. But remember, you don't have to buy new toys. Some of the best open-ended materials are those you can find around the house, like cardboard boxes, paper towel tubes, measuring cups, and spoons. Next, think about the variety of materials that you have. Maybe you have materials that really support children's home culture and language. Write that down. And remember, children are more likely to engage with and explore materials that are familiar to them, so write down some of those things.

And also, write down some areas in your learning environment where you'd like to add a little bit more variety and some varied materials that really represent the children that you work with. Lastly, how accessible are the materials and learning environment in your program? Go ahead and write down some things that you're doing well, and maybe some areas where you may need some support. Take one "Teacher Time minute, and we'll be back.

Judi: OK. So, we've covered engaging environments. Now, let's talk about our interactions with young children. We want our interactions to be nurturing, responsive, so that they're effective. And one of the most important pieces is understanding that, when children feel safe, they're more likely to explore. So, these warm and nurturing interactions really lay the foundation for children's discovery, and their feeling that they can go out and explore the world.

When it comes to science, infants and toddlers may not have all the vocabulary that they need to express their thoughts and ideas, but it's important for us to come along beside them, and observe with them, and engage with them during their exploration, respond to their interests, and talk to them about what they're seeing, and maybe even what they're thinking. These interactions with other peers and with adults really help the development of science skills like inquiry, reasoning, and problem-solving. And at the same time, it supports children's growth and development in social skills, language, and communication.

So, we're going to talk about a couple of strategies that you might want to use to support children in engaging in this kind of back-and-forth interaction. So first, we can use scaffolding. And I'll tell you a little bit about that in a minute. You might have heard this term before. Second, we can help children use basic inquiry skills. Third, we want to speak science. And then lastly, invite children to communicate with us. So, let's start with scaffolding. First of all, scaffolding means this ... Providing just the right amount of support for children so that they are able to move from what they already know to whatever is coming next in their learning.

So, you can scaffold by offering children opportunities to learn how to do a task in smaller steps, like hand washing. Step one, turn on the water. Step two, get some soap. So, for very young children who are kind of learning this whole task, breaking it into smaller steps that you can support them in is a great way to scaffold them. You can also scaffold by using your voice. So, for example, if you want to talk about what it means to be quiet, you can use a quiet voice. And when you're saying it's time to be loud — if you're singing or you're outside — you can use a loud voice. So, children are learning the vocabulary both by hearing the words but also by experiencing it.

So, these are ways that we can support children in accessing learning opportunities that may be just out of their reach, but when we're there to scaffold, and lift them up, they're able to be successful. Scaffolding children helps children engage in more complex thinking and problem-solving. So, it's important to observe closely, see what they already think, or know, or are able to do, and then, to be there with them to kind of help move them forward to the next step. The research shows that, when we give children opportunities to explore on their own, this promotes their curiosity, and keeps them engaged longer than when adults give them direction.

So, we need to make sure that we find that balance between observing and letting them explore, but then, also, watching to when they hit that point of frustration, so we're there to

step in and give them some support. Talk with children about their observations. Maybe ask questions. "What did you notice?" Or, "Why do you think this happened?" You can also ask parents to teach you some words or questions that they may ask in their language at home. And for children with hearing impairments or speech delays, you can learn words that describe a new concept through sign language. You can learn simple, common words through using online video tutorials, or by talking with families about what they use at home.

Third, we want to speak science. So, this should be something included throughout the day, indoors and outdoors, throughout your routines and activities — using words that encourage children to be inquisitive and curious. You can talk about things that you observe, things that you want to investigate, or make comparisons. "This one is heavier than this one," or, "It's colder outside today than it was yesterday. I see you wore a jacket." Using language extends and enriches scientific experiences, and it really supports children's growth of science knowledge. So, pay close attention to what children are engaged in, and then try to use some science words to really communicate with them about what you're seeing, and maybe what they're doing.

Finally, this leads us to inviting children to communicate with us. So, even though infants and toddlers — well, especially infants — maybe don't even have any words yet, they still can communicate with you through some sounds, or some eye gaze, gestures. Older toddlers are learning language, but can respond verbally to show you what they're interested in, or maybe even learning some words. So, modeling and open-ended questions encourage children to describe their observations, to ask new questions, maybe even make some predictions, and to notice similarities and differences.

Children are going to start to learn to explain what they see, and what they experience. And if you model that for them, it'll give them something that they'll be able to build on. And again, we want to make sure that that we're engaging families in their child's learning by encouraging them to ask questions at home, and invite their children to communicate, and also, if necessary, asking them for some language to support children in our environment. So, if they're using common phrases or questions at home in their home language, we can ask for that, and maybe try to use some of that as we work with children every day.

Treshawn: Scaffolding is so important with infants and toddlers. Let's see how it's done. So, we're going to watch a video of a teacher with her toddlers as they engage in nurturing and responsive interactions during science play. So, use box three in your viewer's guide to write down the ways in which you see this teacher engaging in responsive science-related skills in this video. Take a look.

[Video begins]

[Whispering inaudibly]

Woman No. 3: Yeah, he's whispering. Oh, I know. Where else will that fit? Hmm. Where will that fit? It fits on your finger. Hmm. Where else will that fit? Hmm. That's too big. That one's too big. Too big. Too big. Yep, too big. What about a clothespin? [Gasps] That fit. Did you see that? It fell all the way through. Oh. Hmm. I'm going to put the yellow in there. James, look. If



you get up on your knees, you can see inside. Hmm. Hmm. Hmm. [Boy shrieks] I think that's his words saying, "I'm not finished." I think we need to wait. He's still playing with it.

[Video ends]

Treshawn: This is another great one of those science-in-action videos. And so, we're going to give you one "Teacher Time" minute to write down your thoughts on the ways this teacher really scaffolded, and used inquiry skills, and spoke science, and invited the children to communicate during this interaction. When we come back, we'll also share what we observed. Take a minute. Alright. Time is up.

So, here is what we thought about this video. The teacher really scaffolded by showing the children an object that would fit into the hole to kind of help them see what was supposed to happen. And she also stood up on her knees to show children how to get a better view of the pegboard. She used basic inquiry skills by asking children questions like, "Where does it fit?" And she really spoke science by introducing words like, "too big," and "balance," and "fit." And, you know, she really invited the children to communicate by asking what were they thinking about. And one thing she did was imitate a child humming, like he had a question.

Judi: That's such a great video. I hope you were inspired by seeing effective and nurturing interactions in action in a setting that serves infants and toddlers. So, the last thing we're going to talk about today is how to support science learning with infants and toddlers through the experiences and learning opportunities we offer. So, to help us think about that, we've asked Gail Joseph to come share some of her ideas that you can use right away to help infants and toddlers explore science ideas. So welcome, Gail. Hi. It's so nice to see you again.

Gail Stephens: Hi, ladies. Thanks for having me. So, I thought I'd get out of the office, and kind of get on our playroom floor, here, because we're talking about infants and toddlers, and that's where they spend a lot of time, and when I was a teacher, I spent a lot of time with them. So, I brought with me some empty plastic bottles with their lids, and empty plastic bins. But what we're going to do is turn these into amazing science sensory sensations. As you've been talking about, for infants and toddlers, science is so much about exploration and discovery.

So, we're going to turn these into great things to explore and discover for young children. One great way to create science exploration for toddlers are to create just some bins filled with fun sensory materials. So, all you need is an empty bin, and then fill it with something that you think might catch a child's eye, and they want to pick it up, hold it, compare and contrast. So, I've just filled this one with some pom-poms. This one is pretty fun. This one is filled with all kinds of different ball shapes, so that they can explore, and start thinking about this one makes some sound, this one actually lights up, this one has something inside of it, this one has holes. Do they bounce? Do they drop? Do they make a sound? They can explore all kinds of ways with that.

This one – something probably a lot of people have — is just shredded paper and then some fun mylar in there that might catch their eye as they explore. And then, for infants, we've created some of these safe exploration bottles. So, we just filled these empty plastic bottles with different types of material — things that you might just have around your home, or in your classroom. This one is filled with some fun colorful dice, and it makes a lot of great shaking

noises. This one is just water and some dish soap. And what's fun about this one is, the more you shake it, the more bubbles come about. This one has just some water, and oil, and some good old food coloring, so that you can see the contrasting part more, in terms of where the oil and the water separates. And that can catch somebody's eye. This one is very fun.

This is actually just little pieces of aluminum, and we put a little bit of glitter in there. But it's got kind of a soothing sound, definitely sounds different than this one, but also has a fun sparkling reflective paper for the infants to see. And here is one with just some beads. And here is one that just has some pipe cleaners in it, which also doesn't make much sound at all, but is a very fun different kinds of colors and shapes in there. And one of my all-time favorite sensory bins from when I was a teacher is to make some ice water balloons.

So, to make ice water balloons, you just need some water balloons, some water, and then, if you want to, you can use some food coloring, and put it inside the water balloons, as well. So, you would just add a couple drops of food coloring if you wanted to, which I think makes them pretty fun, and then, fill the water balloon with water. Tie it up. Be really careful, because it's got food coloring in there. Tie it up. Put it in the freezer probably for overnight so it gets good and frozen.

And then the next day, you just add a little bit of water to a sensory bin, or maybe even a sensory table if you have one in your classroom, and you will peel away the balloon. And make sure you carefully discard it, because we don't want any balloon material around infants and toddlers. And you're just left with these colorful ice ... They almost look like marbles, or planets, and children love them because they're super cold, which is a fun way to explore their senses, and they can move them around in the water, and watch them melt. If they are sticking around a little bit, you can also start asking children, like, you know, "Why is it getting smaller?"

Anyways, just a fun way to ... something to add to a sensory bin or a sensory table to engage young children, and ask some of those great science questions. All of these things get really enhanced with science when you make it work with words. To help children make sense of their experiences by describing what they see and do, ask open-ended questions, such as, "I wonder why ...? What do you think will happen if ...? What else can we try?" You can even ask young infants open-ended questions. They might not answer, but you are helping to develop their scientific thinking.

Commenting, describing, making comparisons between objects, materials, and asking questions are all ways to help young children learn new words and connect new information to what they already know. And that's all I have for you today. Back to you.

Treshawn: Thanks so much, Gail. These are really great ideas that I'm sure the children will love. You always come with some good stuff. So, now, let's take a minute to talk about the arts, and how they can be used to support children's exploration of science concepts. So, art experiences can give children opportunities to explore all of their senses. Think finger painting and Play-Doh. Think about how these opportunities really support the scientific inquiry.

Like, when children are painting, or drawing, or engaged in pretend play, or playing with musical instruments, or constructing buildings. Are they learning about cause and effect? Asking what will happen next when you add another block to the tower really helps them

understand cause and effect, then. Are children developing creativity and problem-solving when they're finger painting and things? Are they learning about the properties of objects, like smooth paint, and soft cotton balls, and squishy Play-Doh, and sticky tape, and something that's big and small or thick or fat.

So, here is an example of a toddler on your screen, on the slide, making art with feathers. Really after she learned about the importance of feathers to her tribal community, she's learning about the properties of objects, like how the feather feels soft to the touch, and how it's so light, and how the glue is sticky, and can be used to connect two objects together.

And she's also understanding that feathers won't stick to the paper without some glue or some tape. This is cause and effect. And although she's not yet able to verbally ask questions, she's still making observations, and predicting, and exploring scientific concepts. What are some ways that you'd like to connect art and science in your learning environments? So, take a look at box five of your viewer's guide, and then take a "Teacher Time" minute to write down some ideas to share with your teaching team, or your supervisor. Go ahead and take a minute.

Judi: Wow. We covered a lot today. Thanks for sticking with us. Before you go, I just want to remind you of the three main points that we covered.

First, children are born ready to explore the world, so it's our job as teachers and family child care providers to make sure that we're providing engaging, and interesting, and accessible learning environments.

Second, we want to make sure that we are regularly engaged in nurturing and responsive interactions. That makes them effective. And remember, when children feel safe, they're more likely to explore.

And third, we want to focus on those learning opportunities we provide our young children, the chance to explore ideas that they're curious about. And remember, most importantly, be curious with your children. Sit down next to them, and explore along with them. When we do this, we support children's growth and development across all of the ELOF domains. Well, we're so glad you joined us today. The last thing we're going to do is give you some helpful resources that are going to support you engaging with the little scientists you work with every day.

Treshawn: OK. Great. Let's start with MyPeers. So, MyPeers is a virtual, informal social community really used to exchange ideas, and share resources, and lend support to the early-childhood community — including teachers. So, if you haven't already joined MyPeers, you can join via the ECLKC, and you'll find us there in our "Teacher Time" community, where we'll be posting some videos, and sharing strategies related to supporting our little scientists during this season. You know, and there are 58 open communities on MyPeers, with over 10,000 members, in addition to "Teacher Time" community. So, you might find some other interesting communities to join. Well, we've created a handout for you in the green resource widget that highlights some of the relevant communities that you may want to join.

Next is Text4Teachers. So, this really is a fun and easy way to get information, tips, research, and resources all right straight to your phone. You get two free text messages a month. How cool is that? Then, we have the ELOF2GO. And this app is where you can learn more about the

ELOF, and you can have on-the-go access to the ELOF goals for children. And it provides you with effective teaching practices to really support children's growth and development. So, you won't have to carry that book around. You can just use it on your phone.

Our last thing that we have is the Ready DLL app, and that's new, and it's now available in your App Store on your phones. So, if you work with children who are dual-language learners, in this app you can access tons of resources, and learn key words and phrases, and discover implementation strategies right from your smartphone. So, that's it for apps.

But our next "Teacher Time" season ... Sorry, our next "Teacher Time" episode is in November, and we'll be talking about exploring science with preschoolers. Or you can join us in December to talk about exploring technology with infants and toddlers. But remember to download any helpful resources, again, from the green resource widget. And so, we thank you for joining us this time. We hope you had a great time. See us on MyPeers, and we'll see you next month.  
Bye!