

Teacher Time
Preschool Math Ideas: Hiding in Plain Sight

[Music]

Kristin Ainslie: Hi, everyone. Welcome to Teacher Time. I'm Kristin Ainslie.

Dawn Williams: Hi, I'm Dawn Williams.

Kristin: And we work here for the National Center on Quality Teaching and Learning. We've both been classroom teachers, and we are very excited about our show today.

Dawn: And so we want you to go ahead and sign in. You might notice that that's underneath your screen right below where you're seeing us. That way we can keep track of your attendance and you'll let us know that you're here. There you can also opt in to join our Teacher Time community and receive email communications from us and announcements of upcoming Teacher Time webinars and the follow-up documents which we send out after every show.

Kristin: That's right. We want to say a quick hello to Michelle Jones.

Dawn and Kristin: Hi, Michelle.

Kristin: Thank you! She emailed us recently after our last show. She did mention that she finds the Teacher Time shows very useful for her, which is great to hear. She's also working with teachers on communication in the classroom. So she has been using the Teacher-to-Teacher Talk in-service suite that we have on the ECLKC. We've also pointed her to some more resources on that, but that is a great suite to check out if you also are wanting some information on teacher-to-teacher talk. So welcome, Michelle. I hope you're here today.

Dawn: Yeah, that was a great suggestion. And please do that. We'd love to hear from you all about that stuff. And anytime you have suggestions for us, we can also share them with everybody else, so keep it up!

Kristin: Yeah, that's right.

Dawn: All right, so there's also an evaluation. You guys hopefully will know the routine for that. This is how you can receive your certificate of attendance. So what you have to do is, at the end of the show, the evaluation will open up, and you can fill out the evaluation. At the end, there's a question asking whether or not you want to receive a certificate of attendance. If you do, please go ahead and enter your name as you want it to appear on the certificate and double-check your email address so we know that we have it right, and you should receive that in about a week.

Kristin: That's right. Okay, so we're going to get right into our show today, because it's going to be very exciting. It is called "Preschool Math: Ideas Hiding in Plain Sight."

Dawn: Mm-hmm, math is everywhere.

Kristin: All right? And we have got lots of guests today. Really excited. We are going to start out with Déana Scipio. She was here last wee-- last month with us, reading storybooks, and she is back this month to read some storybooks about math. We're also going to talk with Soleil Boyd from the University of Washington here, and she's going to talk to us about mathematizing.

Dawn: And then in our Try It Out! section, we also have Liz Wimmer with us. She's one of our curriculum specialists here and has been doing a lot of work on the math toolkits that we'll talk about a little bit later in the show. And she'll be here to show us a video and talk through some activities that are in there. And then Dr. Gail Joseph will be with us for Resiliency and Wellness and the Behavior Management Minute.

Kristin: It's so great. Okay, so before we get to Déana and her storybooks about math, we're going to take a very quick chat break. So we want you to think about your favorite storybook that you use in your classroom. And it could be related to math, it could even be not a math book, right, that you pull out math concepts. So here's how we want you to do it in chat. So go ahead and click on the button that says "want to join," and then you can type in your name and hit "enter" on your keyboard, and that will allow you to just begin chatting away. So go ahead and enter in your favorite storybook, and we will be back in just a moment.

[Music]

Dawn: Okay, we're back. Thanks for chatting in some of those books. We were watching them as they came in, and which transitions us perfectly into Déana.

Kristin: Hi, Déana.

Déana Scipio: Hi. Hi, everyone.

Kristin: Welcome back.

Déana: Thank you so much for having me back.

Kristin: Those suggestions were great, right, coming in chat?

Déana: So great. Mm-hmm. "Very Hungry Caterpillar," a classic. "Caps for Sale," also a fantastic book to talk about math concepts, and a great story.

Kristin: We love it. Okay, so what have you got today? I'm so excited.

Déana: All right, so I brought four books. I'm going to start off with another classic, "Anno's Counting Book." And one of the reasons that I really like this one is that it is a wonderful book for representing math in lots of different ways. So if we look at this page, it's page 8, right, we've got the number eight

written, we've got boxes along the side that show adding up to 10, right? We've also got eight of every single thing that's on this page.

Dawn: Oh, wow, so many opportunities to count!

Déana: So many opportunities to count, lots of opportunities for kids to pay attention, look really closely at things, figure out where different objects are. They can also tell you a story about what's happening in the picture.

Kristin: Well, I remember you talked about that last month, right, about having books with no text so the children can really create their own story about that.

Déana: I love it. The other thing to think about is there's so many counting books out there. Lots of counting books in different languages. So that would be a great thing to bring in a new language and new number and counting systems. Really great ideas. So, "Anno's Counting Book." Another sort of nonfiction-ish book is "Great Estimations." Estimations, I think, are a wonderful transition between counting and adding numbers and to making guesses. Your best guess about what numbers are is a really interesting concept for kids to think about in math really early. Elementary school classrooms are often filled with jars of things, and they might be buttons or marbles or jelly beans. And so if you're doing this with your kids in class, you could really be setting them up to do really well when they get into elementary school at guessing about numbers. This book I really like because it really gives you different ways to think about what different groups of numbers look like. So this is looking at some 10s, and they call it eye training. Because what you're really doing is training your eye to recognize a group of 10. Because you can estimate lots of things. You can estimate the heights of things, you can estimate the weights of things, but you can also estimate how many things there are on a page. It'd be really difficult to try to -- you could bring 10 things into your classroom and have kids do it on the table, but by the time you start getting into larger numbers, like what does 100 look like, it gets really difficult to do that with materials that you might have in your classroom. But you can definitely do it with a book and pictures like this. Here's what 1,000 looks like, and the book continues. So it's a really great just entry point into having kids think about big numbers.

Kristin: To visually see what 1,000 looks like. Okay, that is great.

Déana: So you've got questions that guide the inquiry and then hints on how to compare and how to learn to recognize the different kinds and numbers.

Dawn: Ah, that's so helpful.

Déana: So up with "Great Estimations." All right, so I have another book that might not typically be considered a counting book called "My Friend Rabbit," and it's a good combination between a story and also some wordless sections that kids can fill in what's happening next. I also picked this book because it's a Caldecott winner. So we know that the illustrations are top-notch, and it's just so beautiful. All right, so in this book, we've got Rabbit and Mouse. Mouse is telling the story. And so you can notice that this book is a pre-loved book. It's perhaps -- some overzealous fingers ripped some pages, and they've been taped back together, but I actually brought this because I think it's great to

think about you can use all kinds of books in your classrooms, and this one only cost me \$2.99; it was on sale. I'm a big fan of reusing books as well. So this story is, you can also tell, about what's going on for the characters, what kinds of emotions are happening for them. Can you imagine what poor Mouse is thinking? "Not again, Rabbit!"

Dawn: Well, and you can think about near and far, too.

Déana: It's too far away?

Kristin: It's too far away to reach.

Déana: So they have to make a new plan.

Kristin: They're problem-solving, okay.

Déana: Guess about what the plan might be, who Rabbit is recruiting to help.

Dawn: Oh, he's very big.

Déana: Uh-huh, size, big and small, tall and short, right? And here's one of my favorite pages in the book. This is what happens when all of these animals get together.

Dawn: Oh, look at that, how you might be measuring in animals.

Déana: Uh-huh. And counting how many animals there are on the page.

Kristin: Measuring tools. Oh, my goodness, that's so -- oh, there's so much math! And I wouldn't think about that as a math book.

Déana: Which is why I brought it in!

Kristin: Great. Okay.

Déana: And the last one, of course, was one that was mentioned in chat, "The Doorbell Rang."

Dawn: Oh, perfect!

Kristin: We love that book. Good.

Déana: So this one's about sharing and cookies and math. All the best things, right? So the story starts off with Ma, who's just baked some cookies. "'I made some cookies for tea,' said Ma. 'Good,' said Victoria and Sam, 'We're starving.' 'Share them between yourselves,' said Ma. 'I made plenty.'" So there's two kids. "'That's six each,' said Sam and Victoria. 'They look as good as Grandma's,' said Victoria. 'They smell as good as Grandma's,' said Sam. 'No one makes cookies like Grandma,' said Ma as

the doorbell rang." Now, there's another really important thing in this particular book for kids to think about with patterns. There's math. Patterns are math as well. And thinking about the ways that the story progresses in a patterned way. Also, more and more people start turning up, as you can imagine.

Dawn: Oh, fewer cookies. Going to have to share them.

Déana: Fewer cookies. Mm-hmm, now there's 12 cookies but 4 kids. That's 3 each. And as the story continues, more and more people show up. Now there's 12 kids. There's 12 cookies. Only one cookie each? Oh, no!

Kristin: Uh-oh, the doorbell rang again.

Déana: The doorbell rang again. What are they going to do? They're sadly staring at their cookies. The doorbell's ringing and ringing. What are they going to do? "Perhaps we had better eat them before we open the door."

Kristin: There's one idea!

Déana: That's one idea. "Well, we'll see," said Sam." And guess who it is? It's Grandma with more cookies. So a happy ending.

Kristin: Well, I love how that can be extended for children who need a little bit more challenge, dividing, right? And also for kids who are just kind of beginning this concept. Fantastic.

Déana: And you get to talk about sharing and cookies. I mean....

Dawn: Win. Wins all around.

Kristin: Thank you so much for -- will you come again next month?

Déana: Okay! I would love to.

Kristin: Okay, good. Thank you, Déana.

Déana: Thank you for having me.

Kristin: That's so great. Okay, so because of the books that you chatted in earlier and all the great information that Déana just shared with us, grab a piece of scratch paper or just think in your mind. Take a moment to write down a question that you will ask children about your favorite book, thinking about how you will bring out the math in the book you mentioned before. So we have a very brief transition. We're going to bring in Soleil Boyd with us, but while we have this transition, go ahead and write a question down that you will ask children using your favorite book. We'll see you in just a moment.

[Music]

Dawn: All right, everybody. We are back with Soleil Boyd. Hi, Soleil!

Soleil Boyd: Hi. Great to be here.

Kristin: Thanks for bringing your knowledge to us. I can't wait to talk with you.

Soleil: I'm excited.

Dawn: We're so happy to have her here because Soleil has been a classroom teacher, she currently teaches the math course to teacher candidates, so she's training teachers, and she's also the director of professional development and coaching at another early childhood center that we have here. So we're just really excited for her to share all her knowledge and expertise, especially in math.

Kristin: All right, so, Soleil, we were thinking about your knowledge and all that you do with math. Have you always liked math?

Soleil: Yeah. Yeah.

Kristin: You know, why?

Soleil: Well, yeah, that's a really -- that's a really interesting question. I think... actually, one of my first interests or loves was really to understand and learn about music. I played trumpet, I learned how to read music, and so that was actually what I was really interested in, you know, in grade school, middle school, and high school. Later, when I became a preschool teacher, I became really interested in how young children were learning math. I could see a lot of excitement, but I also noticed I had a lot of anxieties. But going back to where I originally started, I also began seeing how math was everywhere. It was really -- it's part of music. When you're reading music, there's whole notes, half notes, quarter notes, the scale. There are so many mathematical concepts there. And so many mathematical concepts in art or in nature or architecture. So it's just so interesting, because it's really a language that so many people use -- everyone really uses -- and is in so many other areas of learning. So I just think it's a really interesting area of learning because it's pretty universal.

Dawn: Right. I mean, that fits in so well with what we've been doing all season with STEAM, that math integrates into so many areas that we already do. And, you know, it reminds me of this concept of mathematizing, which is one of the things we wanted to make sure we talked about today, so tell us what that is.

Soleil: Yeah, mathematizing. So this is kind of a long word, but -- that's right, mathematize. And so you can practice saying it. But, you know, mathematizing is actually a pretty simple idea. And it's to notice and to bring out the math that's all around us. Another, maybe a more technical way you could say it, is to reduce to a mathematical formula. That sounds very fancy. I think it really could be just noticing how many or what size or what will happen when we put these together. And those are ideas and activities we're all doing all the time. So mathematizing is just noticing and talking about it.

Kristin: That is -- that's good. And I love that word. It's kind of a fun word to say, and it just feels like we're doing something, right?

Soleil: That's right. Well, we are, absolutely.

Dawn: So then what are the reasons to mathematize then?

Soleil: Well, mathematizing is really a powerful way, actually, to engage children in math learning. There's some really interesting research where researchers observed classrooms and counted how many math words are teachers using. And what they found out was that when teachers use a lot of math words, the children in their preschool classrooms have really great math outcomes. It makes a really strong difference. So that's great to know: teacher math language throughout the day -- it wasn't just during a math lesson, it was really throughout the day -- can make a big difference. The other part is that all young children are really engaged in math, but where we see differences is when children have or have not learned to talk about it. So we may see the same kinds of play in the block area, where children are engaged in geometry or spatial relations or measurement as they put blocks together; however, children who talk about it are the ones who are really connecting that learning to language and really having strong performance when they get into those older grades or even those pre-K assessments.

Kristin: So that also goes with kind of what we have been talking about of really then we want to make sure we're asking children the right questions so that they can practice responding.

Soleil: That's right.

Kristin: With math talk.

Dawn: Yeah, reminds me of Hart and Risley, meaningful differences.

Soleil: Exactly, yeah. And so those meaningful differences, right, I mean, it's -- this is research that's been around kind of for a long time, and we're realizing it really fits in with math as well specifically.

Dawn: So talk about it.

Soleil: Yeah, talking about it and helping children talk about it.

Dawn: Okay, so then how can teachers do that?

Soleil: How? Yeah. I mean, there are so many ways and so many times. So if we think about all the hours in the day we spend with young children, right? How many times do we really stop to make something mathematical? Can we increase that? And also can we do it outside or in different parts of the classroom? So one great thing, and you'll see on the screen here, is when you're outside with young children is to mathematize when they're playing on the slide, mathematize. And so you might say -- and draw out some shape concepts, some geometry concepts. We see the ball here. You could say, "Look at this ball roll down." Or you might say "sphere" if you really want to add some more

technical math language. Or, "How fast will the ball go? Will it go faster than you?" So again, these aren't really very complex ideas all the time, but it's putting the language with the ideas that really enriches the moment.

Dawn: Well, and it just sounds like a really natural thing that you could do, right? Like you can -- a parent or a volunteer in a classroom, anyone can come in and just kind of think of some words that they could help try to bring out that'll get them focused on math and learning some of those concepts.

Soleil: Absolutely.

Kristin: It's hard to remember.

Soleil: Well, and I have a cheat sheet for things just like that, because I don't remember everything, right? So I put together this list, and so this list just helps me think about in different domains of math learning, number and operations. I can just ask questions like how many or could we add or take away. Similar to we were hearing Déana talk about those math questions that come out in books. We could review -- you know, I like to review this sheet before I do a lesson or go outside just so I have it in my mind, "Okay, what are some of the terms I might use?"

Dawn: Yes, yes. I mean, you could just take a few of them and put them in dramatic play or something.

Soleil: That's right. You could put this around your classroom. I think that also helps us bring out math for children that maybe always gravitate to a certain area. We're like, "Come to the math area, come to the math table." Maybe they're not gravitating there, but we can take the math to dramatic play. We can take the math to the block area more explicitly and really meet them where they're already interested.

Kristin: And what if we sent something like this home for families, maybe a scaled-down version of a couple words that we've been working on. I love that.

Soleil: That's a great idea.

Kristin: That's so good.

Soleil: Yeah, so make that school-home connection even stronger, yeah.

Kristin: Okay, good!

Dawn: So, you know we love a plan when we talk about teaching.

Soleil: Who doesn't? Mm-hmm. I do, too.

Dawn: So, and we talk a lot about CLASS and working on those instructional support domains, so what you see on your screen now is something that can help you do that.

Soleil: That's right. So we've been thinking not only just about how can you throw a word out there, right? So that's good, that's great, and that's a great place, and that counts. But we also want to draw out children's thinking skills, right? So we want to ask questions not just how many are there, but how could we have them problem-solve? How could we have them come up with solutions or try different approaches? So here's a list of ways and just suggestions that might prompt you to think about how could you do some parallel talk with young children? So the example there, you're connecting all the rectangular blocks end to end to make a long line. So here we're using geometry language, we're using measurement language, we're using spatial connections or awareness about where these blocks are placed. So just in that one statement, we're hitting on a lot of math domain elements, actually, while we do parallel talk.

Dawn: Oh, that's great.

Kristin: So that is planning, but it's going to go far, right, because your children are going to get more math language from you, they're going to begin to use more math language, and, I mean, a win-win.

Dawn: And you're also sure that you're hitting those domains as well.

Soleil: Right, and so you can look at this -- I mean, in thinking about planning and working with other teachers, it's great to collaborate and bring more ideas together. How could we use, you know, connections to children's lives in the dramatic play area and with math? You know, I think making those connections all the time is what mathematizing is.

Kristin: Okay, that stuff's so good. Okay, we're going to play a game with you, Soleil. Are you ready?

Soleil: Yeah, okay. I'm ready.

Kristin: You have so much knowledge. We're going to have a little bit of fun. And we're going to play a game. It's called, very originally, Stump Soleil!

Soleil: Okay, all right.

Dawn: We know you want to come on after this again.

Soleil: Yeah, I know. Well, we'll see how this goes.

Kristin: Okay, so we have thought of some routines, some typical routines in a classroom, and we're going to just throw them out and see how you would mathematize during that activity, okay? So we're going to start with hand washing. Happens all the time.

Soleil: Hand washing. Well, we know we want children to be washing their hands for a certain amount of time, right, so they really get them clean. So we're thinking about time. We might use a little timer, a little digital timer or a little egg timer and crank it up to one minute or whatever amount of time you're really aiming for with these little guys. And so you could have a child set the timer, you could also talk about the timer as it's winding down. So, "We're halfway through our time, we're three-quarters of the

way there." So that might be a way to help children not only successfully wash their hands but also be thinking about some math and some measurement and some time awareness while they do so.

Kristin: Perfect.

Dawn: Good job. Good job. We're going to try again. So... a lot of time in the preschool classroom, there might be times when children are waiting around. Not something we always plan for, but there are those times. And those times can sometimes turn into challenging behavior. So how could you mathematize some waiting times?

Soleil: Yes, mathematizing waiting time, let me think here. You know, something that is not only mathematizing but actually connected to some resilience -- so this is something I like to do, math and resilience -- is noticing. So noticing maybe five things. And, you know, with resilience, you might notice five things you smell or five things you're seeing, and you could mathematize that to go, "Let's notice five things that are two-dimensional shapes," if you're going there with young children. So that could be a square or a circle or a triangle. Or you might want to take it up a notch and, "Let's notice five three-dimensional shapes." So are there any spheres in our environment? Are there any rectangular prisms in our environment? Are there any cubes in our environment? So you could really kind of go with whatever level the children are at, or if you want to challenge some to keep it interesting, right? We want them to be engaged, so...

Kristin: Absolutely. You could pre-plan these, right? So that also makes us think about those transitions. So, so many transitions happen during the day. How can teachers mathematize those? Boom, go!

Soleil: Oh, whoa! I got a "boom!"

Dawn: She did so good with the other ones.

Soleil: I mean, transitions are a big part of so many days and a hard time for a lot of children, so we do want to have them be engaged, and why not with math? So something that I like to see and like to do is maybe count how many doors we're going through. And that's nice for a few reasons. Children are really tracking themselves in space, they're really aware of their own body in space. They're also using some spatial terms, so going through, that's a term that we'd want children to know. And also they're counting, and so that can kind of keep them aware of, you know, "There are three doorways between the outdoor play area and my classroom. We're at doorway two. How many more do we have to go?" So that can be a way to help children kind of notice the math around them.

Kristin: Love that. Okay, we did not stump her, Dawn.

Dawn: No.

Soleil: Not yet!

Kristin: You're too good. You pass with flying colors, Soleil.

Soleil: Thank you.

Kristin: So, so good.

Dawn: All right, so now's a chance for you all to try and do something similar to this. We are going to do an activity together. What you are going to see coming up on your screen in just a moment is a form that's called Mathematics Planning Form. It's part of the math toolkit, and we'll point you to that later. But we're going to try to complete this all together as a group. Something new. We're going to give it a shot. So what we're going to do is, in chat, we want you all to put in some ideas or activities or questions for each one of these categories. So for example, in small group, on one side of the form is all the different times of the day, and on the top of it are different math concepts you'll find in High Five Mathematize, which we'll talk about, and also from the Head Start Child Development and Early Learning Framework. And so what we're going to do is try to populate these squares in here. So in small group, for example, what is some question or concept or something you could give us about number concepts and quantities? Or if we were in transitions, what's something we could do around patterns? So what we want you to do is put in your responses into chat. We're going to be watching. We're going to do this for three minutes, and what you put into chat we're going to type in here. And so on your screen, you'll start to see your answers come up on the form. And we're going to do this for three minutes.

Kristin: That's right. We're going to see how far we can get. Would you start the timer for us, Soleil?

Soleil: I will. I have my handy timer, a three-minute timer here. So I'm going to turn it over. On your mark, get set, start.

Kristin: All right!

[Music]

Dawn: Oh, that was great! We were typing in as fast as we could. Sorry if we didn't catch yours. This was so exciting. It's the first time we've tried this. We basically just co-created and filled out this form.

Soleil: That was very impressive.

Kristin: Wasn't that fun?

Soleil: So fun.

Kristin: Ideas were just pouring in.

Dawn: And this is such a great opportunity. I mean, we can hear from people from all over the country right now. Just imagine the power and the ideas. It's so exciting what we get to do together. So we're going to send this out in follow-up and go through chat again to see what other answers were there and do our best to fill it out, and just so you have more ideas and examples for how to use this form. And we'll also point you to where this is on the ECLKC. It's all just ready there for you to download.

Kristin: That's right. And we're going to, again, as Dawn said, we're going to fill it out in follow-up, we'll give you examples of all these, we'll try to fit them in, as many as we can in there, so that was really great. Okay, so, Soleil, thank you so much for being with us. That was such a rich, rich talk.

Soleil: My pleasure. I am so impressed with this matrix that everyone put together. The ideas were just flowing. So I'm excited. I know you guys are going to do great mathematizing.

Kristin: This is very, very exciting. Okay. So, we have a quick poll. I'm so sorry, we have a very quick transition again, but it's not -- it's well worth it. So we want to know on your quick poll, what is your favorite time of day to mathematize? Circle time, small groups, transitions, outside, or meal times? And we will be back in just a moment with Liz Wimmer for Try It Out!

[Music]

Dawn: Okay, everybody, we are back. And Liz Zimmer is with us. Hi, Liz!

Kristin: Hi, Liz. We're so happy you're here today.

Dawn: Yes. As we mentioned earlier, Liz is one of our curriculum specialists, and she's been doing a lot of work on the math toolkits, and as part of that process, been reviewing a whole lot of video that we have on math and science concepts. So we wanted to tap into her knowledge and all the work she's been doing here at QTL and have her bring a video for us to look at today.

Liz Wimmer: Thank you. Yes, it's very exciting. We have a lot of new math videos up, which I'm going to tell you about in a minute. But right now we're going to be watching one that integrates math and science in sort of more of a planned activity. So be watching for the ways that this teacher helps children develop math skills.

Kristin: Okay, good. This is going to be great.

Teacher: Let's make another prediction. Do you guys think the smooth surface will make it go near or will it make it go far? Put your hands down. Remember, think of one thing, just one choice. If you think it's going to go far, raise a quiet hand. 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15. Whoop, 15! I'm going to write the number 15, 1 and 5. Now put your hands down. If you think it's going to go near the ramp, put your hands up. Remember, if you already raised your hand for far, you're going to keep your hands down right now. 1, 2, 3. Three kids think it's going to go near. So let's experiment. Count down for me. 3...

Children: 2, 1.

Teacher: Here it goes. Whoa, it's going, it's going, it's going.

Child: Orange!

Teacher: You're right, it landed on the orange. We have to record that observation, so I need a recorder to come up here. Let's see. Jahas, come on up. Will you count how many squares it went? 1, 2, 3 -- oh, Jahas, slow down so everybody can count with you. Ready?

Teacher and Jahas: 1, 2, 3, 4, 5.

Teacher: So we're going to use 5 of these little Post-Its right on the foil. So 1, 2, 3, 4, 5. Put 5 of them on. There's 1, there is 2, there is 3, there is 4, and there is 5. Excellent.

Kristin: All right, welcome back from that video. Liz, that was a fantastic video. There's so much in it.

Liz: Yeah, there's so many great things that this teacher was doing. So if you're thinking about what skills was the teacher helping develop in terms of math, first thing is I heard a lot of great vocabulary, both science and math. So we heard the words "predict," "observe," "record," which were all science, and then math words that you might not think about being math words, but "near" and "far" are measuring the distance from a certain point, so she brought those in, too. And then she had children compare, which is fundamental. And she did that by only changing one thing in the science experiment, so then the children could compare how the cylinder rolled down different ramps with different materials. And then she had children measure, because she put out the non-standard measuring tools of the pieces of colored paper.

Kristin: That was ingenious, I thought.

Liz: Something that the children are familiar with. And then she also brought in graphing. So she had -- after they counted how many rectangles that the cylinder ran down, then they were able to -- children were able to use Post-It notes up on the little graph that she made. And so one note I didn't mention that after this -- we didn't show it, but children get to do this activity hands-on themselves in small groups.

Kristin: That's so great. I love that. So the thing about the -- she just extended it a little bit more with the graphing. I mean, that's just taking it a little bit farther.

Liz: Right. That is the key point, so thank you. Yes, she took her science and just added a few more things in to bring in math.

Kristin: Right. Talk about good planning that happened, whether -- where she was able to incorporate all of this together and then extend it. And that doesn't just happen. I mean, that's --

Liz: No. But once you start thinking in that mindset, it's not that difficult to just add in a little bit more. So we're just going to look at a few things like that with both measuring, like what additional things can you do to bring in more measuring? So, first, thinking about do children know what things they can measure, what attributes are measurable? Time, capacity, how much of something is in a container, length, width. Do they know what those things are to measure? And then practicing with comparing and ordering, so directly comparing two things, like when children are back to back and measuring their heights against each other, or indirectly comparing, when they build a tower of blocks and then

different children are measuring against that measuring tool. And then, finally, quantifying things using numbers and units of measure, like Fanny did with the non-standard measuring tools with the paper. So she brought in both language to measure and she brought in both -- and the measuring tools.

Kristin: There's so much there, Liz.

Dawn: It's so wonderful to have those steps broken down for measuring skills, like to provide that knowledge.

Kristin: Right. What are things that children can measure? I love that you have that up there, because it's just, it's not necessarily just in a cooking project, right?

Liz: Yeah, well they might not be aware of all the different ways you can measure.

Kristin: Yeah, absolutely. Good! Okay, well, I think we're going to go --

Dawn: With the graphing.

Kristin: Yeah. Oh, perfect.

Liz: There's one more.

Kristin: Good, good, good! Okay. Good.

Liz: So to bring in graphing, one thing that I thought was cool is if you think about sorting, which probably children are doing already, so if we take a science example of, say, they're sorting leaves, so we've got piles of different leaves with different shapes. So if you just take that one more step and you can lay out those leaves in lines, maybe on a poster board, and you might actually have the lines already drawn on there, then they can kind of put one leaf per square, so they automatically have an object graph without too much difficulty. And so that's the first step. And then next, when they have a lot of experience working with object graphs, then you can bring in pictures for making the graph.

Kristin: Okay, but starting with the objects you're saying is really key for beginning these skills?

Liz: Yep, yep.

Kristin: Okay, good. I'm just thinking about all the things that kids could graph now in the classroom.

Liz: It could be really exciting.

Kristin: Collections, leaves. Yeah! Really, really, really great. Good. Okay, we're going to just run right into Resources, Liz, because you have been working on the math toolkit. And why don't you just take it away here, telling people where to find things on the math toolkit and what they can find.

Liz: So what we've done is try to gather all the professional development resources related to math onto this one page on the NCQTL web page, part of ECLKC. And you might just find it by searching for "math" on the page, but it is in the research-based curricula pillar. And once you get there, this is what the page will look like. And just really briefly, the four areas: know, see, do, and improve. "Know" has sort of a quick look at the main concepts. "See" has our great new videos, which we'll be looking at that page in a second. And then "Do" has learning activities, classroom resources, extensions for families. And "Improve" has links to our coaching resources and other tips for, like, staff meetings.

Kristin: So the videos are exciting.

Liz: Videos are the big new thing. So we have example teaching practices in all these categories that you can watch and see different teachers from around the country doing these examples, so that's really awesome. And then this main resource, High Five Mathematize, which hopefully you're familiar with, but it is in the "Know" section, and it's a very comprehensive guide, professional development in all the math areas, so I'd definitely take a look at that.

Kristin: So that's also in the math toolkit, right?

Liz: Yep.

Kristin: Great, in the "Know" section.

Liz: It's like the go-to place for math.

Kristin: Okay. Good, good. Thanks, Liz.

Dawn: There's one more resource we want to tell you all about. It's the Next Generation Preschool Math, and they are doing some research-based iPad apps just on math. So they're all free. If you are using iPads in your classroom or you know families that have some, this could be a great one to refer them to. I think there are eight different apps that are available now, and they hit concepts that are right there in High Five Mathematize, like subitizing and patterns. And the one you see right up there is similar to the book Déana read, but it's about sharing and how they're working with fractions already. So great free research-based iPad apps that you can start using if you'd like.

Kristin: Absolutely. That's great.

Dawn: All right. So, Liz, thank you so much for doing this with us today. We appreciate it. We are going to take a short break with a poll. We want to know if there's any Teacher Time watch parties happening. So let us know if there are other people watching with you. And when we come back, Dr. Gail Joseph will be here for the Behavior Management Moment and Resiliency and Wellness.

Kristin: And I have one little thing to add about the poll that is new, a little bit new. So if you are clicking the button that shows if you're having a Teacher Time watch party and you click the button that says you have five or more people with you, if you could also then write in chat how many people are with

you if it is five or more. All right, so now, take the poll. Stay tuned for Resiliency and Wellness and Behavior Management Minute.

[Music]

Dawn: All right, everybody. We are back. Hi, Gail!

Gail Joseph: Hello!

Kristin: Hi, Gail.

Gail: Hi. I'm glad to be here.

Kristin: I'm so happy you're here.

Gail: The magic of live television.

Dawn: That's right. All right, we are ready for Behavior Management Minute.

Gail: Well, I understand that today's Teacher Time was about math, and so I thought what might be fun is to think about some ways we can do some management strategies that also incorporate some counting and numbers. So I have a few things to show that might be just what you need to solve a behavior issue at the moment. So one that I absolutely love are counting cards. So you can see this little girl is counting, she's got the numbers there, and she's counting along one-to-one correspondence. And what's great about these is that you can use these as a way to help children take turns. So the problem that you might be solving is that you've brought out a new toy, something that only one person can use at a time, and you want to structure turn-taking. Sometimes we do this with a sand timer, but maybe not everyone has those, and this is super easy. You print it out; you just have the numbers there. This teacher happened to laminate it; you don't have to. You can have them around the room, and children can grab it when they need to monitor turn-taking. They count -- one, they practice, they get to count, get to practice counting 1 to 20, and then the child knows that when they get to 20, it's time to trade, and then the other one can count, right? And then you could talk about if you need a longer turn or a shorter turn, and so you could have different number lengths, right? So maybe it's just some things are 1 to 5 and some things might go up to 30. And so every time, and children are highly motivated to do the counting, because they want a turn to get to, maybe it's like a safe little trampoline that you have or some type of other kind of a certain swing that you have outside. You can bring these outside, too. I've seen one teacher that has a counting card taped right next to the water faucet so that when a child is drinking, the child behind them counts for their turn and they go to the next one. And I've seen one teacher actually put the materials they need to make a counting card in the writing center. So children can make their own counting cards when they need to have a counting card.

Dawn: Then they're practicing writing.

Kristin: Oh, my gosh, mathematizing.

Gail: Mathematizing, but also really helping with what could be a challenging moment. So here's another one, right? Counting in line. So this one is store-bought, but you could clearly make something like this to put in your classroom. So we've talked before about the importance and helpfulness of having a visual reminder of where children need to be. So here it is. It's time to line up. If we don't have some kind of visual reminder, we could get a big clump of children all lined up together and pushing, and "I'm first," "I'm second," and that kind of thing. But here we have these numbers, and every child can stand on a number, and so you can work on number recognition, but at the same time you can work on where do I stand in line, right?

Kristin: Yes. Where does my body need to be?

Gail: Yes. Exactly. In space. Gives me that little bubble.

Kristin: How far away from the other child?

Gail: Great, because even if we line up and we're right behind each other, we know that that can be problematic. So here we've incorporated numbers there as well. This is a little activity turn-taking cue. And so this one's like a really well prepared one, but children could do it -- you could have children write their names as well. But here the children all have their picture with their name. It's something that the teacher has prepared well in advance, because she knows that using the computer, which is sometimes something that we use to increase math skills and development, that she knows that that's going to be a highly sought after space. And so she's thought about it beforehand, incorporates kind of the numbers here, too, and also order -- who's first, who's second. And when children go over, they put their name on the next number in line, and then they know it's their turn to go next. You can use a counting card. Exactly.

Kristin: That is fantastic for behavior.

Gail: Isn't that fun? I know. Another one, great for behavior, also gets some numbers in there. Okay, I love this one. So this is actually a picture, and what the teacher has done with this one is, you know those restaurant kind of menu stands? They're clear. You can pick those up, actually --

Kristin: A little triangle?

Gail: A little triangle, yeah, tents maybe. You can pick those up or you could even just create something where this is standing on your small group table, and it's a reminder here, right, because how many times have we done something with glue? Kssshh... So I want to give you a proactive reminder of how much glue will it take to do this activity? Three dots, right? And if three dots doesn't work, you could do three more dots. So here you think about, well, what will they need to finish this activity? How many stickers can they take? How many dots of glue might it take? And here we have not only the number, but we have, again, kind of the cue there with the dots: three, three dots of glue. Isn't that another fun one? You can think about that.

And then I love this one, too. So this one is at mealtime, and sometimes at mealtime, even when we're doing our family style meals, somebody takes the bowl of oatmeal and kind of puts the whole thing on their plate, and you maybe want to kind of monitor that. Or maybe you have a snack time that children get to access on their own. But you want to have some parameters about how much you should take, and if you're still hungry, you could get more, but let's start with, and here's it's four scoops of cereal into your bowl. So you could put it up there, and the child can count. They see the four spoons, the number four. So those are just some ways I thought that would be fun to think about how you could incorporate some numbers and math and mathematizing your behavior management.

Kristin: It's going to go so far, though, in your behavior management. All of these are such great strategies that I have not seen a lot of these, and I love that.

Gail: This is very fun.

Kristin: Okay, good. Thank you. We're going to take just a very, very quick break, and then we're going to go right into Resiliency and Wellness.

Gail: Fantastic.

Kristin: All right.

[Music]

Hello, everyone. Welcome back. We've got our section Resiliency and Wellness with Gail Joseph.

Gail: Still here.

Kristin: We're happy about that, Gail. What have you got?

Gail: Okay, so today -- you know I always bring you something.

Dawn: How did you manage to do that?

Gail: And I brought you some...

Dawn: Look at these nice garden gloves.

Gail: Gardening gloves, because today's tip about increasing our own health and wellness as teachers. Today's tip is about lending someone a hand, because one of the best ways to increase your happiness and your health is volunteerism. Volunteering increases your happiness. So they've actually done studies about this, and the more you volunteer, the happier you are. So you volunteer once a month, you increase your happiness by 7%. You volunteer on a regular basis, a weekly basis, 16% happier, right? Doing something for others. And Martin Luther King said, everybody can be great because everybody can serve in some way, right? Volunteerism. So, and you can help out. You could help out at the food bank, you could help out with gardening. You could garden the neighborhood pea patch.

Okay, but one thing that people often say is that, "I just don't have time. It sounds great, I'd love to do it, but I don't have time." And this is like one of the most fascinating things about volunteerism. So they've actually studied this. There was a study done by University of London School of Economics, is that people that volunteer, even busy people, when they compare the same kind of schedule of busyness, people that volunteer feel like they have more time. It's actually this concept called time affluence.

Kristin: Really? Okay.

Gail: So you volunteer once a week, you actually feel, even if you might not have more time, you feel like you have more time. And part of it they think might be because you feel like you've accomplished something, you can check it off and I've done this and I was productive and I have more time. So even if you think, "I don't have time," that cannot be an excuse, right, because you can increase your time affluence. But you could also think about ways to do it as a family, right? So I know that when I'm not working, one of my biggest things that I want to do is spend time with my family. So one of the things my daughter and I do together is we volunteer at the food bank together. And it's our together time. And then just think about that. You volunteer once a week, and you're volunteering with people that are volunteering, and we already know they're happier people. So you also have this time once a week that you're surrounding yourself with happier people, which also increases your happiness.

Kristin: There's going to be a big boom in volunteerism after this.

Gail: I know. And if I haven't convinced you, there is this new movement called microvolunteerism. And so it's like if you really, really don't have time, it's a way to just do a little thing. And I actually want to tell you, though, I'm volunteering right now. I mean, I'm on Teacher Time, right? But there's these really cool things you can do now. Like there's these apps. So I downloaded this app last week called Be My Eyes. And what it actually is, is it's a volunteerism app for people with visual impairments that might need once in a while, they might need some help with reading a label or something that they just can't do, they can just click on their app, and they say, "Can you read the expiration date on this label for me?" If you're available, you get a ping. You can look at it on your little phone, and you can look at the -- as long as you have kind of the screen, you can look at it and say, "Oh, that's expired," and that's all the help they need; you can sign off. So you can always be available. So it's a little microvolunteerism. Awesome. Isn't that the coolest thing ever? So all these kinds of ways.

Kristin: Okay, no excuse.

Gail: No excuse.

Kristin: Happiness booster.

Gail: Happiness booster. And if you need to find some places to volunteer, and to find a good match for skills that you have, you can go to volunteermatch.org, you can go to serve.gov. These are both places that their whole purpose is to help you find a good volunteer match for you, okay? So helping hands.

Kristin: I love that, Gail. Seriously.

Dawn: That's the information. Thank you.

Kristin: Oh, that's fantastic. Thank you!

Gail: You're welcome.

Kristin: Okay, good. So we are going to --

Dawn: Wrap it up.

Kristin: That's right, we're going to wrap it up. [Laughing]

Dawn: Alrighty. So before we go, we just have a few closing remarks for you. So why don't we just go straight into that instead of taking a break.

Kristin: Yeah, I think that sounds great.

Dawn: Our time is just about up. So we would like for you guys to stay in touch with us. We heard from Michelle. We want to continue to hear from you guys. So please send any questions or comments you might have to ncqtl@uw.edu, and if you do, we will have a token of appreciation for you.

Kristin: That's right. Absolutely. So go ahead and look for the Teacher Time follow-up announcement. Everything that we talked about today will be in that announcement, and there was so much today that you're going to want to follow up with, right? So make sure that you have signed in to Teacher Time. It's going to be open for another hour, so you can have time to do that. And if you sign in, you can opt to receive the follow-up and announcements for us of upcoming shows.

Dawn: That's right. And we'll also be on the Office of Head Start Facebook page in just about an hour. We're going to be there live chatting with you all, doing a follow-up conversation. We'll be there. So if you'd like to chat with us on Facebook, we will be there. Just go to the Office of Head Start Facebook page.

Kristin: That's right. And the certificates also will come to you. And we just want to remind you that this is the only time that you can get a certificate. We would love it if you watched the show later on, but this time right now is the time to get your certificate.

Dawn: All right, so next show will be May 8th. It's the last Teacher Time show. It's going to be about STEAM, of course, and also nature-based learning. So we're excited about that topic and how we'll be able to focus on bringing some STEAM into nature.

Kristin: We're already tearing up about our last show, though. So, I don't know, we'll have to figure something out, Dawn. I can't say goodbye yet. Okay. So you can always find our recordings on the ECLKC. And the one that we have just done are always on TeacherTime.org.

Dawn: And so we will see you again next month. And as we always like to end, here's your moment of awww.

Teacher: It looks like Isaiah wants to talk.

Isaiah: Listen here. [Giggling] Your turn.

Boy: We're at the rodeo, piggy! [Giggling]

Girl: Hello. [Giggling]
[Music]