

Dr. Valerie Henry (00:00):

I think assessment and evaluation are two different things. Evaluation is often where we put a number to something and we try and give it a grade. Assessment is where we're trying to understand what students are thinking. And, I think they're very different animals.

Bethany Lockhart Johnson (00:19):

Hi, and welcome to another episode of Math Teacher Lounge. I am Bethany Lockhart Johnson.

Dan Meyer (00:24):

And I am Dan Meyer.

Bethany Lockhart Johnson (00:26):

Dan, we're in fluency land! How you doing? How you doing?

Dan Meyer (00:30):

I'm getting more and more interested in it. Every new guest we talk to gives me some new angle on fluency that helps me see what an important part it is of a student's development of new ideas, and, I'm also, in my own personal life, getting excited to see fluency kind of bloom, with the—

Bethany Lockhart Johnson (00:45):

Wait! Say more about that! Back that up!

Dan Meyer (00:48):

I'd be happy to; thank you for asking. Yeah, I've been noticing one of my kids does direct counting no matter what the sum is. Four plus three, I'm gonna start at one, two, three ... seven. Or 10 plus 12 — I'm going all the way back to one, gonna direct-count that thing for the first 10, then the next 12. And I find it more fascinating now. So, what are the experiences that he needs to be able to see the value of just like, no, just say, "Hey, here's 10. I'm here at 10 and now count up 12 more," let's say. And, I've seen the limitations of just saying, "Hey, do this. You should do this thing." Well, no, kids' ideas just take longer to—

Bethany Lockhart Johnson (01:30):

You're not doing that, Dan. You, Math Teacher Dan, are not telling your child, "No, no, no. Solve it this way."

Dan Meyer (01:38):

No, there's no way to do that! I haven't tried it. But there's just futility where the kid's just not ready for it. Whatever's going on in his brain is so much more powerful and durable than any words I would have to offer. However, I have been offering various experiences — for instance, this game that we call "Garbage," that has five cards on top in a row and five cards on bottom in a row. And the kid's gotta find seven. At first he'd count one, two th—, five, six, seven, with his fingers counting. But, recently, we've had enough of those experiences where he just starts at six. He just says, "That first row is five; I know this now." Or he's even started at 10 and gone backwards. And so, to me ... it's a mystery. It is a mystery; I love a good mystery, love a movie mystery, a book mystery, love a math mystery. Like, how are these

ideas taking root in his head? That's where I'm coming from with fluency this week, and kind of excited to talk more today about it with you.

Bethany Lockhart Johnson (02:37):

I love hearing that. And, sorry I jumped on you a little bit, because I thought you were saying, "No matter how many times I tell him that's not how you do it, he keeps doing it!" <Laugh>. What? Who are you?

Dan Meyer (02:49):

I'm like, "You won't get dinner. There's no dinner tonight for you." <Laugh>. Nope. You're gonna start counting-on if you want a treat. Yeah, you know me.

Bethany Lockhart Johnson (02:55):

Let me tell you. But, what I love is that you're giving him repeated experiences to practice building that relationship with those numbers, because that is exactly what we celebrate in our classroom. Right? "Ooh, what if we do this?" And now he gets it. He sees that five. Right? Eventually, well, sure, you can keep counting up to five, but eventually he won't need to. He is like, "OK, five, six, seven, eight." Or, what if you give him some larger numbers? Something like 32 plus two. He may start at one — I've seen it — and go all the way up; but maybe he would hold that number, that large number, and then count on. But, I could sit here and tell you—

Dan Meyer (03:40):

You can't help yourself, can you?

Bethany Lockhart Johnson (03:42):

I can't help myself. Because I love this—

Dan Meyer (03:42):

You're like, "What's the next thing?"

Dr. Valerie Henry (03:44):

—so much! I love the way students think. My kiddo's two and a half, and I'm not forcing <laugh> the counting, but I do give ample opportunities for counting. I love counting with my kiddo and exploring different concepts in math. But, I think we need more of this, Dan. We need more of you sharing what is going on in your household as your kiddos are beginning to develop fluency.

Dan Meyer (04:13):

Oh, I am game.

Bethany Lockhart Johnson (04:15):

I'll take a daily report.

Dan Meyer (04:16):

The real win of it all is that they ask to play this game. They don't know that they're learning math. So yeah, I love talking about this with you. It's grown on me. And I love the guests that we bring on, and the perspectives they bring to bear on fluency. And none more so than Dr. Val Henry today.

Bethany Lockhart Johnson (04:37):

If you love talking to our guests, you are really going to love talking to Dr. Val Henry again. We spoke with Val a few seasons ago about fluency in a shared episode with Tracy Zager and Graham Fletcher, getting a couple different perspectives on fluency. But, today, we are talking to Dr. Val Henry specifically about assessment, but I'm sure the conversation will run the gamut. She is an amazing, dare I say, expert on fluency. She's been thinking about this for decades. And she's done research about it, and developed a program called FactsWise that I've used in my own classroom. And she also is a university professor at the University of California, Irvine, teaching pre-service teachers and helping them develop their relationship with math as they dive into their first classrooms.

Dan Meyer (05:29):

So I hope you folks enjoy this interview as much as we did with Dr. Val Henry.

Bethany Lockhart Johnson (05:37):

We are so thrilled to have you back, Dr. Henry. Welcome, so much, again to the Lounge. Thank you so much for joining us again.

Dr. Valerie Henry (05:47):

Thanks Bethany. And Dan. Thank you both for inviting me.

Bethany Lockhart Johnson (05:51):

Oh! Did you hear that?

Dan Meyer (05:53):

It was like a dot, dot, dot. It was a very short pause. I'm happy with how that went, honestly. <Laugh> Yeah. Welcome back, Dr. Henry.

Dr. Valerie Henry (06:00):

Thank you.

Bethany Lockhart Johnson (06:01):

It's actually kind of appropriate, because we recently chatted with Jasonimba, who we were really excited to get a peek into his brain and how he thinks about fluency and mathematics in general. And, I worked on Dan a bit, because Dan's been a little less than enthusiastic about fluency. But I'm telling you, ever since we had you on the show, we've had these questions buzzing around about fluency. And it keeps coming up. And we knew we had to have you back. And, in fact, you're really the inspiration for this whole season. ... Dan, before we ask any questions, share a little bit, just to give a little framework about your perspective, because I think it's good she knows what she's getting into.

Dan Meyer (06:52):

Sure, that's fair. I do feel like you're asking me to share with Val what it is I find uncomfortable about the work of fluency that she's into, but I'll just go with it. As a math educator, I've always been really excited about introducing the new. I've been a little bit less excited about fluency. Especially because I think a lot of the way fluency is developed in students nowadays constitutes a lot of people's negative memories of math class. I don't wanna associate fluency completely with those bad vibes, but thinking about the endless worksheets or Mad Minutes, or just those kinds of traumatic experiences, a lot of them have been in the fluency realm. And so I've been a little bit ... cold to it, let's just say. Bethany is warm to fluency; I would say warm-to-hot. And I've really enjoyed talking with Bethany about how to develop math fluency in kids, especially as we both have really young kids, and thinking about how they develop those ideas. So, I wanna believe. I want to be a believer here. So, I'm excited about this season, excited to have you on the show.

Dr. Valerie Henry (07:56):

Well, Dan, I have to tell you, I was cool-to-cold about fluency 20 years ago. So I'd been doing a lot of professional development, a lot of it around algebraic thinking back in those days. And I'd go out and work with teachers and with students, and the teachers would say, "But we can't do algebraic thinking with our kids, because they're not fluent."

Dan Meyer (08:23):

They don't know the basics.

Dr. Valerie Henry (08:24):

Or, I'd work on problem solving. And they'd say, "They can't do that, because they're not fluent." And I'd go in, and I'd sort of show them that kids can do a lot of great math thinking, even if or before they're fluent. So I was really resistant to this; but every single upper grade teacher that I talked to brought up fluency as a roadblock. So when I went back to school to get my Ed.D., I decided that I would really investigate this. What is going on with this? And so by learning about how other countries really do a better job often with fluency teaching and learning, I decided maybe it was worth looking at from a different perspective than worksheets or timed tests, that kind of thing, so that we could get away from those negatives.

Dan Meyer (09:17):

I appreciate that background enormously. I feel like we have a new kinship, you and me, here <laugh>. It does resonate with me that the new stuff that excites me is often much more challenging to students if they struggle with some of those basics. If they struggled with prerequisite skills, foundational skills, ... I don't know what word would be most appropriate here. But that as a mission, as your desire to understand those skills, because they support these other skills that also interest you, that's a helpful route in for me in this conversation. Whatever that's worth. Thank you.

Dr. Valerie Henry (09:54):

Cool. I'll also say one more thing that has really stuck with me over the years. I had a teaching assistant who grew up in China, I believe, and learned her early mathematics in China. Very fluent in English, so she was helping me with a graduate course. And I said, "One of the things we're gonna be looking at is basic facts fluency." And she said, "Well, what's that?" And I thought, "OK, maybe she doesn't understand the word fluency." So I explained that and she said, "Yeah, yeah, yeah; I get that." And then I said, "Basic, like between one and 20." And she said, "Yeah, I get that, but why are you calling them

facts?" And I said, "Well ... because ..." and she said, "Well, let me explain. In China, when we grew up, we learned that one plus one was two, and then everything else was a relationship that was built off of one plus one is two. They aren't facts; they are relationships, and are provable." She said, "Facts are things that you can't really know unless somebody tells you." So I'll just share that as an insight that I have into this whole language of basic facts fluency. I hate to call it that now, but that's what I think a lot of people understand what we're talking about when we reference it that way.

Bethany Lockhart Johnson (11:29):

This is really a helpful perspective, Val, and ... I'm saying Val—

Dr. Valerie Henry (11:34):

That's fine.

Bethany Lockhart Johnson (11:35):

Dan, you continue to call her Dr. Henry.

Dr. Valerie Henry (11:38):

I'm way more comfortable with Val.

Bethany Lockhart Johnson (11:41):

It was my joy to get to learn from you at University of California, Irvine. And, I felt like the way that you approached your pre-service teachers was like you were helping us to heal our relationship with math. And something that I learned from you was really a new way to think about assessment. And when we think about fluency, people have been jumping in with, "Well, timed tests." Right? Or, we gave the example of like, Teachers Pay Teachers. They pull up a themed timed test; and, therefore, if I give it to you every Friday, you're gonna get it. And I know some of your research has been specifically why timed tests are problematic, why they don't work. Right? Why they aren't enough. But, you had a bigger picture of assessment. And I'm wondering if you could share a little bit about that.

Dr. Valerie Henry (12:33):

So, when I was growing up, teachers often thought that assessment would drive students to become fluent, without really anything else happening in the classroom. Maybe an occasional worksheet, maybe an occasional around-the-world kind of game, or something. But most of the time it was assumed that you would go home; you would somehow learn those basic facts on your own; and the testing would compel you to keep working at it at home. So assessment was sort of seen as a force that would require kids — that would compel them — to make sense and become fluent. My theory is — and this is what we do in every other subject — we teach the subject to the students, we work with them, we give them learning experiences, and then we assess. To find out how far they've come towards meeting the learning goals we have. And the assessment doesn't happen without the learning experiences in the classroom. And I often talk with my student teachers about this: We would never think about saying, "Go home and learn how to read and we'll just test you every Friday; and, therefore, you will learn how to read." So I don't see why we're doing that with math fact fluency. It's so foundational to mathematics, and it gives everybody such a sense of confidence and number sense. Why are we assuming that we shouldn't be teaching it? And so when I say teaching, I don't mean lecturing; I mean providing learning experiences.

Dan Meyer (14:29):

You're describing a diminished sense of what fluency is. If it is possible to teach it just through assessing it, that implies a definition of fluency that I think the rest of your work speaks to the opposite idea. That it is rich, requires persistent development on the part of a teacher, work from the student. That's just an interesting dichotomy that now we're moving into this other way of thinking about fluency.

Dr. Valerie Henry (14:58):

Yes. And I think it goes directly back to the idea that if we thought of fluency as learning facts, things that could be put into a song, or things that could be chanted, and that could be learned just through verbal memory, then we thought of it as something that you could just test over and over. But, if we think of fluency as these relationships, and finding strategies that can make connections between something that we know ... like, I know two plus two is four, so therefore I can use that to help me figure out that two plus three is five, without having to memorize two plus three is five on its own, without making connections.

Bethany Lockhart Johnson (15:49):

I'm curious if you can talk about what has assessment looked like to you in your research, where you were able to really see those relationships students were building with these numbers, with these facts? And how is that maybe different than what we wanna get away from <laugh>?

Dr. Valerie Henry (16:08):

Absolutely. So, when I first started reading the literature about fluency, one of the things I realized was that the psychologists who actually specialize in studying the challenges of fluency in mathematics do one-on-one assessments. So that they can really hear students not only say the answer correctly or incorrectly and they can get a sense of how long it took them to come up with their answer, but they also get to ask them this really important question. Which is, "How did you get that answer?" And so, one-on-one assessments are so different than timed tests, in a couple of different ways. The first one is that you actually find out how fluent — I'm gonna move away from whether or not they're fluent — but how fluent they are with the fact, with the math problem. As opposed to on a timed test, which typically has 20, 50, or a 100 problems. And students completed it and you have no understanding of how they completed it. Whether they were skip-counting on their fingers, whether they were jumping around and going, "OK, five times seven is 35, so now I'm gonna look for seven times five, because now it's in my short-term memory, and then I'm gonna do 35 divided by seven and 35 divided by five," all without really having been fluent with any of those. Just capitalizing on skip-counting and short-term memory. So, 1:1 assessment taught me a lot about how to really understand what's happening with students. I'm gonna stop there, because there's a whole other picture, which is, is one-on-one assessment practical in the average classroom on a regular basis?

Dan Meyer (18:14):

Something I wanna say I love about the one-on-one assessment idea is that I think it's something so radicalizing for a math teacher, to become aware that students have interesting ideas all the time. Even if those ideas don't fit into really precise boxes. Like the sort that are expressed on a timed test. And it sounds like these 1:1 assessments did a lot of work on you to help you see that, "Oh, what's going on in the development of fluency is much more sophisticated than a lot of the timed test assessments I gave credit for." I'm just curious, what were a couple of the big takeaways that you had as you did these 1:1 assessments?

Dr. Valerie Henry (19:00):

I've done thousands of one-on-one assessments with students from kindergarten all the way through eighth grade, and, well, actually, even higher. And, one of the things that has really resonated with me is that students do come up with fairly similar strategies. Either because they've invented them themselves, or because they've had learning experiences that have helped them develop these relational ideas. So when I ask a student, "What's six plus nine?" there's usually a small handful of different strategies that students will tell me about. One is they just know it. Another is that they counted on their fingers. Or in their head. Which is not quite at fluency level for me yet. But, then the others are things like, "Well, I gave one from the six to the nine and that made 10; so now I have 10 plus five." Another is, "Well, I just temporarily added 10 to six, that was one too many, so then I subtracted one." It's a little bit different strategy. Another is, "I might have thought of it as seven plus seven plus one." And then I've had one first grader ever say that he knew that that four plus nine was 13 and that he just needed to add two more to get to 15. Nobody else has ever come up with that idea! Just that one little guy. So, yes, you do have a lot of students capitalizing on making tens, sometimes using doubles, and sometimes using a fact that they knew that just helped them build relationships even if it wasn't one of the standards.

Dan Meyer (20:55):

So these are really interesting ways of thinking that aren't visible to teachers from a worksheet or printed timed test, where there's a number and maybe some scratches where students carried something. Or something like that. And you're describing what's visible to you, what's present in these one-on-one interviews. I wonder what's possible, though, in the logistics of a classroom? You're able to do this as a researcher or a consultant. And I'm curious how you'd help teachers who have different logistical demands than you do in your role. How can they capture the best of your one-on-one assessments within the constraints of a classroom? The time constraints, the student constraints?

Dr. Valerie Henry (21:38):

There are a couple of different ways that I think about this. One is, when I wanna understand what strategy students are using, I ask them to share their thinking. Either in the small group setting or in the whole class setting. I usually alternate a little mini lesson, where we do something usually with manipulatives or some kind of visual on the board, with games. And even when the kids are playing the games, I will often ask that the students share their strategy thinking as they're responding with their answers. So, they might be playing a little card game, where they have the nine face up on the table and they'll pick up another card and it'll say four plus nine. And they'll say, "The answer's 13," and then their next job is to explain to their partner how they got 13. That's one way that, as I'm circulating the room, I get to feel like I'm hearing what's inside their head. Even though I'm not doing a one-on-one assessment with them. And I work with teachers, then, to use that same kind of approach for hearing students' strategy thinking. Sometimes they're actually showing it with a manipulative, in addition to or instead of verbalizing it. So we often have them use number racks or 10 Frames, depending on whether we're doing add/subtract or multiply/divide. The manipulatives change a little bit, but they're sharing their thinking either verbally or with the manipulatives.

Dan Meyer (23:26):

I love that you're talking about teachers becoming sensitized, through all their senses, to the different ways that students are developing fluency, even verbally, non-verbally, through manipulatives. And there's something that's so special about that, where a teacher becomes like a fine-tuned antenna for all

the different ways students are being smart and fluent in class. I don't wanna diminish that by asking, "But what about the logistics?" But I'm kind of curious. As a teacher is moving around, and is assessing students in a very real way, while students aren't even really aware that they're being assessed, how should the teacher make good use of that data to support the student's development? I know what to do with the timed test that has 19 outta 20. I put the 19 in my grade book. But what are some productive ways to use all of that data, sensory data almost, to support a student?

Dr. Valerie Henry (24:19):

Great question. And my top recommendation for that is to take a class list, make some columns on your class list, and start writing in some things that you are interested in looking for or looking at. So, if I were working on adding nines, let's say, I might write in, "Student uses plus 10," or "Student makes a 10," or "Student uses a doubles approach," or "Student counts with their fingers," "Student counts in their head." I might list all of those at the top of those columns. And so as I'm walking around, I'm able to just start making a quick check mark, maybe having some room over on the side so that I can write a note if it's something unique that I wanna attend to, and I can start then looking after that one 10-minute session, or a few 10-minute fluency sessions, I can now look at my chart and see, "Wow, a lot of students are using plus 10, but I've got three that are still counting on their fingers." So now I know that there are three students that maybe need some extra support, maybe need some extra time with a manipulative, to help with that. I can also see that the majority of my students are building fluency quite easily with their plus nines. So, we can start moving on to the minus nines, if that's the approach we're taking.

Bethany Lockhart Johnson (25:53):

I wanted to say, Val, just how much I respect and appreciate the way that you listen to students. And, for me, that is what this assessment kind of all boils down to. You are teaching students to think flexibly about numbers. You're doing these routines, and these games, and these share-outs, and spending time supporting students in having experience working with these numbers. And the assessment is just a piece of that. The assessment comes, like you said, during the games as you're walking around, or during a share out after the students are playing the games. But, really, I hope that our listeners are taking from this, like Dan said, using your senses as a teacher, how much you are listening to students. I know you did this as your research. But you just so respect students' thinking. And that is something that I think is so powerful. And so, assessments weren't just something to squeeze in there and then you don't do anything with what you find. You're really listening to them and valuing their thinking.

Dr. Valerie Henry (27:03):

I think that's such an important perspective about assessment. Because I think assessment and evaluation are two different things. Evaluation is often where we put a number to something and we try and give it a grade. Assessment is where we're trying to understand what students are thinking and able to do, what they need support with, what they're ready to move on from. And I think they're very different animals. And so, putting a number on a piece of paper doesn't help me know what to do next with my students. But listening and engaging with them does let me know what's the next thing that I can do to help them.

Dan Meyer (27:49):

Yeah, what you're describing to me has much more in common with my asking a friend, "How is your day-to-day?" than any kind of math assessment that I think a lot of us are familiar with. You're seeking



to understand. It's conversational. I like that distinction between assessment and evaluation. When I ask, "How was your day?" I'm not trying to evaluate your answer in any way, just understand you a little bit better.

Dr. Valerie Henry (28:11):

Definitely. So I have had teachers ask whether this writing things on a chart as I'm listening, or as we're circulating around watching students, is good enough to put on a report card. And so I've asked a few principals, "What would you think if your teacher stopped giving timed tests, or stopped grading worksheets, and did this approach of listening in and understanding where students are in their thinking and marking it down on a piece of paper? Would that be good enough in terms of reporting back to parents how students are doing on a report card?" And at least the principals that I've talked to have said, "Absolutely! That's a completely responsible way of grading fluency, if you have to grade it."

Bethany Lockhart Johnson (29:09):

Val, I was in an Uber in Colorado and I thought of you. Because the Uber driver was like, "Oh, what do you do?" We were talking. I was there for a math conference. And her first reaction was, "Ugh!" She's like, "A conference where you just talk about math?!" And then she immediately launched into, "Oh, I hear those standards they're asking kids ... that's not even how kids think." She went into this whole thing, and she's like, "What is it even all about?" And the first thing that came to mind, I said, "Well, if I asked you to add what's nine plus seven?" And she said, "16." And I said, "Well, how did you get that? You got that pretty fast." And she said, "Well, I don't know, I guess I took something from the seven to make it a 10, and I made 10 plus six." Right? And I said, "That's it. Yeah, exactly. That's it. Right? You broke apart those numbers. You're thinking about those numbers flexibly; that's what we want to happen in our classroom, that our students feel like they can manipulate numbers, and think about it in new ways, and share their thinking." And I tell you, Val, I was thinking of you when I asked her that, and I think she gave me a pretty good rating as a passenger, if not for that story <laugh>. No, but for reals though, it was a really good reminder for me that so many of us have these negative experience with fluency, with mathematics, with assessment. Right? And when it's conversational, and when it's just a part of like, "Let's talk about this. What went on in your brain? How are you thinking about it?" It can be really positive.

Dr. Valerie Henry (30:51):

What's really fascinating is that students love to talk about their thinking. And they feel very special when the teacher listens to them individually. Sometimes we can listen to them individually by doing a one-on-one assessment. Sometimes we can just interrupt the little activity or game they're doing with a partner and say, "I just would love to hear how you thought about that one; I wanna know." And so, the logistics, kind of back to Dan's question of one--on-one assessment versus this circulating as students are interacting with the mathematics, usually with a partner, is that you can interact one-on-one with the student for 10 seconds and they get that same sort of validation, and you get to hear what they're thinking. Or you can spend five minutes with them doing a full-on sit-down with one student kind of one-on-one assessment. And the reality is, most teachers are finding that those quick 10-second interactions are more viable in the classroom than the "sit-down one-on-one with every one of your 30 students, once a week" kind of assessments.

Bethany Lockhart Johnson (32:19):

Val, before we go, I'm wondering, is there a final message or thought that you want to leave our listeners with?

Dr. Valerie Henry (32:26):

One of the things that I've been so impressed by over the last several years, as Common Core instructional materials have become more available is how much more confident teachers have become with relationships related to tens. Because this is what we see from countries that really have very strong fluency programs, is that they invest their time in tens. If it's adding and subtracting, they're making sure that their students know that one plus nine is 10 and two plus eight is 10. I have a Korean first-grade textbook where students spend an entire chapter learning how to make all of the ways to make 10. Not one lesson. One chapter out of their 10 chapters. And then, the next chapters are about how do you use tens to work with numbers? So, for instance, seven plus eight. A lot of American teachers in the past have thought that, "Well, we should teach kids to do seven plus seven plus one." But, that's not what I've read and seen in other countries' approaches. They're constantly and consistently building making tens. So, seven plus eight, the most likely approach of students from these other countries would be to give two to the eight and then have 10 plus five is 15. I've been really impressed by the fact that teachers understand more strategies. Because their instructional materials are emphasizing that. The thing that I'd love for teachers to think more about is why other countries emphasize making tens and de-emphasize doubles. I've done a little analysis. And doubles, and doubles plus one, limit the number of facts you can solve up within ... up to 20. And they absolutely limit what you can do within 100. For instance, how many problems beyond 20 really work with doubles plus one? If I ask, "What's 38 plus 49?" Doubles plus one doesn't help me at all, but making a 10 helps. So I think that's one of the things I've been really impressed by is this shift towards tens thinking.

Dan Meyer (35:05):

That's great to get your perspective there, Val. I know that, as the Common Core first rolled out, a lot of parents were very uncomfortable with some of the changes, especially around fluency. It's really been a generational project, as the students who were coming up in the Common Core are slowly becoming teachers. It's just great to have your perspective on these two snapshots, before and after, and what has changed. And the value of 10. So, thank you so much for coming on with us again. Again, you inspired the whole season. It's just been great to have a moment to dive deeper into fluency with you. And trade ideas. Thank you so much.

Dr. Valerie Henry (35:40):

You're welcome. And I look forward to hearing from teachers, as maybe they get a chance to think more about assessment and fluency.

Bethany Lockhart Johnson (35:50):

Thanks so much, Val.

Dan Meyer (35:52):

Thanks so much for listening to our conversation with Dr. Val Henry, creator of FactsWise.

Bethany Lockhart Johnson (35:57):

Check out the show notes for more information on Dr. Val Henry and FactsWise. Let us know what you thought of this episode in our Facebook discussion group, Math Teacher Lounge: The Community. We're

still early in this new season, so let us know what you'd like to hear about when it comes to math fluency. You can share your questions, your ideas, your thoughts, your wonderings. And make sure you catch all the episodes in this new season by subscribing to Math Teacher Lounge wherever you get your podcasts. And while you're there, we'd really appreciate it if you could leave us a review. It helps other listeners find the show and, if you're enjoying it, let a friend know about it. You can find more information on all of Amplify's great shows at our Podcast Hub. Go to [amplify.com/hub](https://amplify.com/hub). Thanks again for listening.