First-Grade—Weston Transcript

Beginning Info: This video features Tanya Wik Blais interviewing a first grader, Weston, in order to assess his mathematical thinking related to place value concepts. A document containing the interview tasks and materials is available at the Teaching Is Problem Solving website with the concept videos on place value.

Interviewer: We're going to do something here. The first thing I'm going to do is I'm going to take this bag and I'm going to dump it out….

Interviewer: How many cubes are here?

(Weston is counting the cubes)

Interviewer: It's hard to count with the cubes like this.

Weston: Yeah.

Interviewer: If you have another idea of how you want to help you count them, you can do anything with those cubes to help you.

(Weston counting the cubes in a way that'll help him)

Weston: I skipped 34.

Interviewer: Mmhm.

Weston: I skipped it, 34.

Interviewer: There's 34? Okay. On this paper right here, can you write down how many cubes there were? Can you write down the number of how many cubes there were?

Weston: Big or small?

Interviewer: Um, kind of big.

Weston: Okay. You want me to do fancy or normal?

Interviewer: Mmm, maybe just normal.

Weston: Okay

Interviewer: Okay, so 34 cubes? Okay, I'm going to take a marker and I'm just going to circle this part of the 34. (Interviewer circles the 4.) Does this part of the 34 have anything to do with the cubes you counted? Tell me about that.

Weston: Because it's like um…I know I learned it in my classroom, but I forgot the name for it.

Interviewer: It's okay can you just tell me without using that word that you don't remember?

Weston: It's the, uh, it is in the, uh, ones column.

Interviewer: Okay, so there's that's in the ones column. Okay, so I'm going to…-

Weston: It's kind of like because you have 30 and because that's the 3 and that stands for 30 and then the 4 has 4 ones.

Interviewer: Oh, okay.

Weston: So, you get 34.

Interviewer: So, I was going to ask you about that one and you just explained to me that that tells the 30 and that tells the 4. Okay, I understand. Okay. So, let's go ahead and push these cubes over to the side and you can put your marker over here, too. Okay. So, this time…

Weston: Those are Christmas colors

Interviewer: Yeah, I was wondering if anyone would notice that, so this bag has some cups and some cubes in it. Ok, I'm just going to dump these cubes out. All right, could you help me out and could you put 10 cubes in this cup?

(Weston putting the cubes in the cup)

Interviewer: And can you put 10 cubes in this cup?

Weston: I already got 20. And 10 more in that cup you will have 30. 30, 40, 50 ,60.

Interviewer: Oh, so every cup will have 10? Ah, listen to you.

(Weston still counting)

Interviewer: So, you have 10 cubes in in each of those cups. And then we have some extra cubes that are here. How many cubes is that?

Weston: 6…26 cubes.

Interviewer: Okay, tell me about that.

Weston: Did you mean, did you mean like these and these and these?

Interviewer: I meant these and these.

Weston: Ok, so yeah, I got 26.

Interviewer: How'd you know that?

Weston: Because I counted these.

Interviewer: You counted these. Did you count these?

Weston: Mmhm. Like 10, 20, (stopped to think) 21, 22, 23, 24, 25, 26.

Interviewer: Ok, nice. Can you write down that number, 26 cubes?

(Weston writing the number 26)

Interviewer: Nice, ok. So, same as we did last time: does this part of the 26 (interviewer indicating the 6) have anything to do with the cubes you counted?

Weston: Mmhm, because there's 6 here and then 3 + 3 = 6.

Interviewer: Listen to you. And does this part of the 26 (inverviewer indicating the 2) have anything to do with what you counted?

Weston: Mhmm, because these two are 20.

Interviewer: I got it. That makes complete sense to me. Okay. So I'm going to put this over to the side. Can you change…we counted, we counted 26 cubes? Can you change this to 16 cubes? (Weston is thinking and counting)

Weston: 10, and then 3 + 3 = 6.

Interviewer: Oh, so we're not going to use these ones here and so you took some cubes out of this cup right here. How many cubes did you take out?

Weston: 10

Interviewer: You took out 10 from this cup.

Weston: I mean… (recounts) 9.

Interviewer: Can we do that again? Let me see so…one two, three, four, five six, seven, eight, nine, ten. Remember how you could put 10 cubes in that cup and then you counted these and so there were 26, right? Okay. I just don't think I saw what you did. So can you change this so we just have 16 cubes?

Weston: 6…21, 22, 23… (recounts cubes) 10 and 6, I'll have 16 left.

Interviewer: Okay, so if I took these away, you have 16 cubes right there

Weston: Yeah, because this is 10 of them that I had to take away these five so it would turn to 6 in here, and then this would be 10 and 6, which equals 16.

Interviewer: Okay. Okay, so I'm going to have you keep those, those cups right in front of you. Okay, let's pretend that I gave you 25 cubes. I'll give you 25 the cubes; if I gave you 25 more cubes, how many would you have?

Weston: We haven't learned up to those but we have learned like up to 10. So we haven't learned up to 25 more. 25 plus 25 so I don't know what 25 + 25 is.

Interviewer: Could you use something here, either use those cubes or the paper or these cubes. Do you think you could figure that out? Okay.

Weston: Can you like, take these apart?

Interviewer: No, those are all stuck together.

Weston: These ones are took apart.

Interviewer: Yes, you want to use those?

Weston: There's 20, and then I have 20 more, then I have 25…25 + 25 =….

Interviewer: Listen again: remember when you made 16 cubes here? And I said let's pretend that I gave you 25 cubes? It looks to me like you made 25 cubes, here didn't you. So how many cubes do you have?

Weston: 25. Are you talking about those or those?

Interviewer: All of them.

Weston: Oh!

Interviewer: Yeah.

Weston: And these?

Interviewer: No just your 16 cubes and then the 25 I gave you. How many is that?

Weston: I'm going to count by 5's.

Interviewer: Okay.

Weston: (counts by 5s using fingers) 60? It's 60.

Interviewer: Is there a way you could check to see?

Weston: Because it's 5, 10, 15, 20,… so 5, 50 I guess (using fingers).

Interviewer: Is there a way to check to be sure?

Weston: Like, 5, 10, 15, 20, 25 (using fingers) and then I saw my fingers so it would be five, so that tells me it's 50.

Interviewer: Can you help me out with some things? Can you put all of the orange cubes and the cups into this bag, and I'm going to put these over to the side, and then we're going to have something different there to do. Okay. I have a story here that's written on a card, and I'm going to read this story to you and...

Weston: Is it like a math story?

Interviewer: It is; it's just like a math story. So here's what it says. It says your teacher has 4 new boxes of markers. There are 10 markers in each box. How many new markers does she have? So, you can think about the story in your head or you can use any of the tools that you see around you to help you do the story.

Weston: (says immediately) This one's 40.

Interviewer: How did you know that?

Weston: Because 10 markers…like, 4 boxes with 10 markers in each equals 40.

Interviewer: Okay. Can I give you a different story to try? So, this time, your teacher has 13 new boxes of markers, there are 10 markers in each box. How many new markers does she have?

Weston: (takes a ten rod and 3 units) One ten…13 and like 3, so that's… 50.

Interviewer: 50 markers?

Weston: 52.

Interviewer: Weston can you tell me the story about your teacher having boxes of markers?

Weston: She doesn't have any markers.

Interviewer: Well, maybe we'll have to pretend. Are you pretty good at pretending? So, I'm going to say the story again, and let's see if we can pretend that this is really true. All right, so

let's pretend that your teacher has 13 new boxes of markers, and when you open up those boxes of markers, so how many markers would she have? If she had 13 new boxes and every box had 10 markers?

Weston: (takes ten rod) My friend is here.

Interviewer: He's thinking really hard just like you are.

Weston: This one is hard.

Interviewer: Do you want to keep trying, or do you want another story? You get to decide, okay. Let's do another story.

Weston: This one is kind of hard.

Interviewer: That's ok. Ok you're ready for another story? This one has pretzels.

Weston: Oh, he was doing that one.

Interviewer: We're going to pretend that your teacher has 30 pretzels and she wants to put the pretzels in snack bags, so there are 10 in each. How many snack bags can she make? So, Weston, she has these 30 pretzels. What is what are we pretending your teacher wants to do with these pretzels.

Weston: She wants to put 30 pretzels in, like, 10 bags?

Interviewer: Oh, close. Listen again. She wants to take those 30 pretzels and she wants to put them into snack bags, and she decided that she just wants to put 10 of those pretzels in every snack bag. She thought 10 was a good number to put in the snack bag. And she wants to know how many different snack bags she can make.

(Weston is thinking)

Weston: This one's hard.

Interviewer: Is there something that you could use to help you?

Weston: This, like, there's hundreds in this one… I guess this is a 100.

Interviewer: Would you like to use those to help you? Or would you like to use something else to help you? It's whatever you like to use.

(Weston is thinking and taking tens rods)

Interviewer: I think I know what you're trying to do, Weston. I noticed that you get these, you got each of these ten sticks right here, are you pretending those are your pretzels?

Weston: Yes, because there's like 30… because 30…3 times is 30, but I'm trying to figure out like, is it like a minus problem or a plus problem because there should be a problem where there's a blank for the answer. That's what I'm trying to figure out. Oh, I'll just use the ones.

(Weston is counting the single cubes to make a row of 10, then a row of 20)

Weston: 20 and 10 more. (counts out 10 more single cubes to make 3 rows of 10, then counts them all individually). Oh my gosh, it's so hard!

Interviewer: I noticed a couple of times you said 20, and then you said you wanted to make 10 more; is that right? You're counting so carefully, are you looking to see if there's 10 here?

Weston: Yeah because…I'm trying to see if there's a 5 right here and 5 right here.

Interviewer: Awesome that's really good carefully counting to get to 30 pretzels.

(Weston moves aside 10 of the single cubes)

Weston: 20

Interviewer: What did you just do right here? Are you…?

Weston: Because these are like all these are like 10 in each bag, and because this one is in one bag, and then she puts in, like how many, how many tens he puts in each bag.

Interviewer: Well what if she wanted to use all of the pretzels, so she put these ten pretzels in a bag, but what if she wanted to use the rest of the pretzels and put them into bags, too, so there were 10 in every bag?

Weston: So that would equal 0.

(Weston counts each of the 20 remaining cubes.)

Weston: There's 20, and then there will be none left.

Interviewer: So I'm going to scoot these to the side since you were so careful about counting and putting 10 pretzels into one bag right here, right? Could she put those pretzels in bags?

Weston: Because she had enough bags to put in each bag because she had 10 in each bag, so, if she had like 30 bags, then she would have a lot of bags to put 10 pretzels in.

Interviewer: She sure would, wouldn't she? Awesome, ok. You want to go and put those back in there? We're going to do one more thing. So here's the last thing we're going to do. So, I have these cards right here and on this card, it has some little cubes some of those little cubes are not touching and some of the little cubes are touching. Do you see that? Can you point to some cubes that are touching, maybe two cubes that are touching each other? Those are touching each other, right? Do you know how many cubes are that are touching each other?

Weston: 10

Interviewer: So, every time I give you a card, I'd love for you to tell me how many little cubes are on the card. So how many little cubes are on this card?

Weston: 13

Interviewer: How did you know that?

Weston: Because there's ten here, and then you add three more…11,12,13.

Interviewer: And I see just how you were thinking about that. Can you try another card? How many little cards, how many little cubes are on that card?

Weston: 42

Interviewer: How did you know that?

Weston: Because there's 4 tens and then 41, 42.

Interviewer: Ok, I see. Want to try another one? How many little cubes are on that card?

Weston: 50 (before he sees the card)

Interviewer: You think it's going to be more than 42 this time? (Weston nods yes).

Weston: Whoa!

Interviewer: How many little cubes are on that card?

Weston: 54

Interviewer: How did you do that? How do you know?

Weston: Because it has five tens here, because three plus two equals five and then there's one, two, three, four. Once.

Interviewer: And all together that makes how many?

Weston: 54

Interviewer: Okay great. Can we try another one? How many on this card?

Weston: 23

Interviewer: How did you count those?

Weston: Because there's 10 and then there's 11, 12, 13, 14, 15, 16, 17, 18, 19, 20, 21, 22.

Interviewer: How many little cubes on this card?

Weston: There's 20 (points to 2 rows of 10), there's 20, uh, tens.

Weston: 33.

Interviewer: Okay. You ready?

Weston: Oh! A hundred?

Interviewer: Oh, yeah.

Weston: A hundred and… 124.

Interviewer: Okay, on this card the cubes are a little bit smaller, because otherwise they wouldn't fit. Okay, see how those are a little bit smaller this time.

Weston: Oh my gosh!

Interviewer: Yeah, do you think you know how many little cards, little, little cubes are on that card?

Weston: No, I don't know how much, gosh. Okay…a hundred, a thousand, I don't know what this one and this would be.

Interviewer: It's hard to know what's after a thousand.

Weston: I know! It's so hard, I don't know. Everybody doesn't know in my class.

Interviewer: That's okay. How old are you? Six?

Weston: Seven.

Interviewer: You're seven years old. I'd say for a seven year old ,you are an awesome math kid. I can tell you like it, and you work really hard at it. That's just too many to know, huh?

Weston: I bet nobody could solve that in my class.

Interviewer: Nobody could solve that in your class.

Weston: There's like these two, no one even knows what type of numbers would those be?

Interviewer: Oh, yeah. Yeah, so there's hundreds, and there's thousands. What do you think the biggest number is? What's the, what's the biggest number that you know?

Weston: Infinity beyond.

Interviewer: (Laugh) Infinity and beyond? Okay, awesome.

Weston: That's the biggest number of all numbers…Just keep going and going and going. They never stop.

Interviewer: So what's after infinity?

Weston: Infinity1, infinity 2, infinity 3, (goes up to infinity 10).

Interviewer: It just keeps going; when does it stop?

Weston: Until infinity beyond

Interviewer: Weston, I think we're all finished

[End of interview]