Instructional Routines: Professional Learning that Supports Equitable Practices in Mathematics

Learning Forward Annual Conference
December 10, 2019

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## Choral Counting Videos: Practices for Ambitious Teaching

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Choral Count Planning Template

Count by ____ from _____.

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Choral Count Transcript

Count by 1/2 starting at ½

Context: This is the first day the students and teacher are working together in a week-long “fraction camp” for students entering 4th and 5th grade in the fall. Teacher and students are engaging in a choral count, counting by ½ starting at ½. This is the first choral count for all of the students.

T: If we’re counting by ½, what would come next?
S: 2
T: 2 what?
S: Oh I was counting on...1.
T: So we’re counting halves, so ½...
S: 1 and then 1...
T: And then another 1.
S: And then 1.
T: But we’re counting by halves.
S: Yeah, so a half, then another half equals 1.
T: So here’s what we’re gonna do, so ½ and another ½. We could think about that as 1, but we could also think about it as 2/2. So here’s the way this choral count game works.
T: We’re gonna count them together, so I need everyone helping. Ready?
A: ½, 2/2, 3/2, 4/2, 5/2.
T: Ok, I’m gonna ask you to pause right there because you’re gonna count faster than I can write, so we’ve got 6/2, so let’s start again, and then I...we’re gonna keep going. Ready?
A: ½, 2/2, 3/2, 4/2, 5/2, 6/2, 7/2, 8/2, 9/2, 10/2, 11/2, 12/2...
T: We’re gonna stop right here. We’re gonna take a little pause. Here’s what I’m gonna ask you. I’m gonna ask if there’s anything to look at these numbers up here. See if there’s anything that you can use, if there’s any patterns, so I’m gonna give you what I’m calling private think time, so you don’t have to put your hands up. Just think about
something that you might notice, and when you notice something, you can show me that
you've noticed one thing, or you can show me that you've noticed two things. So I'm
gonna ask everybody to look up here, and see if there's anything interesting that you
notice. When you do, just show me with your thumb. So eyes up here, saying do we
notice some pattern? Mariella, do you notice something?

M: It goes like 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12.

T: So that's interesting, so Mariella says it goes 1...are you looking at the numerator? 1, 2,
3, like that? So that's kind of interesting, it's increasing. It's going up by 1, but it's going
up by 1 what? What's it going up by? So Mariella's noticing that the numbers are going
up by 1, 2, 3, 4...

S: Adding up.

T: It's adding, so is it actually going up by 1, or is it 1 of something? Does anybody have
an idea? Gianna, is your idea connected to what we're talking about right now?

G: Um...

T: Like what's it going up by, like 1 what?

G: It's going on by ½.

T: Ah by ½. (writes on board) So we're adding ½. Are we adding ½ here to get from 2/2
to 3/2?

S: Yeah.

T: And Mariella, were we adding ½ to get from 3/2 to 4/2? And how about here, to get from
4/2 to 5/2? Hmm. Who notices something different? Yes, remind me of your name.

B: Brianna.

T: Brianna, what do you notice?

B: Every number is adding 6.

T: Every number...

B: Like 6+6 is 12. It's adding the...into the numerator.

T: So I feel like you're looking, like 6/2 and 12/2, is that what you're thinking about?

B: So 6+6 equals 12.

T: That's interesting, so 6 and 6 equals 12, but I think we talked about, we were working in
halves, so 6/2 + 6/2 is 12/2? You think that's connected? So here's what I heard you
say...I heard you say 6+6 is 12. And then I think about this as 6/2, so do you think
6/2+6/2, like could I write this (writes on board) equals 12/2? That's interesting.

M: 2...every single number ends in 2.

T: Every single number...these 2s? These halves? Why do you think that's happening?

(circles 2s) What do you think? Mariella says every number has a 2...so every number
is a half. Why do we have all these halves up here? Any thoughts about why we have
all of those halves? Like why's that happening?

S: I think that it's because it's counting up, and the 2 would stay there.

T: So it's counting up. Actually I'm gonna write that down here (writes on board)...counting
up. So the 2 stays there.

S: Because they're halves.

T: Because they're halves. So you think they're counting up and because we're counting
by half, they're still halves?
S: Yes.

T: I like the way you’re pondering. I can tell in your face. You want to keep thinking about that a little bit more? Diego, what did you notice?

D: I noticed there’s a big blank spot in the right side, like…

T: Other space over here?

D: No. big space here.

T: Big space here.

D: It’s very interesting.

T: So let’s add some more to our count. So let’s go back. Let’s start again from the beginning. Ready? ½, 2/2, 3/2, 4/2, 5/2, 6/2, 7/2, 8/2, 9/2, 10/2, 11/2, 12/2, 13/2. 13 what?

S: Halves. 15/2…

A: 14/2, 15/2, 16/2, 17/2, 18/2…

T: So here’s what I’m wondering. Watch this. I’m gonna put…right here. So here’s what I wonder. If there was another row here, what number would go right here? So right…so take away, and when you have an idea, just put your thumb. What number goes here? So right below. Alondra, tell me your thinking.

A: 22/2.

T: 22/2. So Alondra says 22/2, and why did you say 22/2, Alondra?

A: Um because I counted the 10 and the 16. 10+6 is 16, and then I added 6+4 equals 10, so then I just added 16+6.

T: Ok, let me have you tell me this again. So you said 10+6 is 16, so you were adding 6/2?

A: And 6...6/2+4/2 equals 10/2.

T2: She just went up to the top. 4+6/2.

T: Do you have an idea?

T2: I think she’s just saying…

T3: She’s seeing the pattern each time.

T: Oh, right here. Thank you. So 6/2, so then how are you getting 22/2.

A: Because I did 16+6.

T: Ah 16+6, and you knew that was 22/2. So plus 6/2 here. (Writes 22/2 in box). So what else? Does anyone notice something else…interesting up here? Diego.

D: You circled almost all the 2s with yellow.

T: I circled all the 2s with yellow because someone said all have halves. Does anyone know anything about this (points to board)...what do you know about 2/2, if I just ask you to look at that. What’s interesting about that? Anthony.

A: It’s a whole.

T: It’s a whole. Tell me about that. How many wholes is it?

A: 2 wholes.

T: I’m gonna draw 2/2. So if I have, if I think about this as…

S: Shade both of them in.

T: Shade both of them in. So how many wholes do we have there? This is half. This is half. We have 1 whole. So could we say 2/2 is the same as 1 whole. Is that true?

S: Yes.

T: So I could also say this is 1 whole?
S: Yes.
T: Hmm I wonder if there are any other wholes. Jona's searching. So take a look. Are there any other fractions here that could be written as wholes? When you've got an idea...were there any other fractions here that could be written as a whole? So I can see 2 people with ideas. Anthony, how are you thinking about this?
A: Maybe like 22/2.
T: 22/2. So that's interesting. Is it ok if I draw 22/2? (draws on board) How many is that?
S: Another half.
T: Another half. So how many halves do I have there?
S: 2/2.
T: 2/2. So can you guys help me, and let me know when I have 22/2? So do we agree that this is 2/2?
A: Yes. 2, 4, 6...
T: How many is that?
A: 4.
T: 4/2...
A: 6, 8, 10, 12, 14, 16, 18, 20, 22.
T: Ok, so let's double-check these. So 2/2, 4/2, oh I need everybody helping. Ready back there? 2/2...
A: 4/2, 6/2, 8/2, 10/2, 12/2, 14/2, 16/2, 18/2, 20/2, 22/2.
T: So Anthony said he thinks 22/2 is gonna make a whole number. How many wholes do we have? So if we have 22/2, how many wholes is this?
S: 1.
T: 1. How many wholes is this? So how many wholes do we have here?
S: 11.
T: 11. Tell me how you got 11.
S: So um I just counted the, I just counted the squares and went 1, 2, 3, 4, 5, 6...
T: So this was 2?
S: Yeah.
T: 3, 4, 5, 6, 7, 8, 9, 10...
S: And then there's one right there.
T: 8, 9, 10, 11...so could we say 22/2 is the same as 11? Anthony, what's your thinking because you were the one who told us I think 22/2 may be a whole. So 22/2 the same thing as 11?...No, what do you think, Gianna? Not sure. Ok.
G: I think there might be another.
T: There might be another whole.
T2: On the chart?
G: Yeah.
T2: Where do you think there's another whole.
G: I think there might be another whole by the, by the 4/2.
T: 4/2. Let's see (writes on board). ½, 2/2, 3/2, 4/2, does that make a whole or wholes?
S: I see a whole.
How many wholes do you see?

2. What is this? 1 whole, 2 whole, oh, that's interesting. So we can think about 4/2 as 2 wholes. Can anyone else find any wholes up there? Turn and talk. Where are there other wholes on the chart? (Students talking)

(Student group)
Can I join your group? I don't have a partner.

You see that p and up? There's a whole.

You see that 9?

You see that 9? There's a whole. You see that 8? There's a whole. You see that 16? There's a whole.

You see that 18?

There's a whole.

So Diego, what are you noticing now?

I don't know (shrugs shoulders).

So how did you know that those were wholes when you were pointing to them?

Cuz they have...

Like 16 and 18?

I think 6/2 is a whole number because well, when we did 2/2, I went to 4/2 because 2+2 equals 4 and 4+2 equals 6, so I'm thinking that since it's 6/2, it might be a whole number. It might be...

So let's come back together. Does anyone have...did anyone think about maybe there are some other wholes? Does anyone have some that you're thinking about? Gianna?

6/2. Let me draw 6/2. How many halves is that?

2.

2/2.

That's 4.

4/2...6/2. How many wholes is that? 3 or 6? I heard 3, and I heard 6. How many wholes is this?

That's 1 whole.

1 whole.

2 wholes, 3 wholes.

Oh interesting. 1 whole, 2 wholes, 3 wholes, so 6/2 is the same as 3 wholes.

Gianna...Gianna says there's more.

Yeah, there is.

Diego, tell me about that...8/2. Let's see 2/2, 4/2, 6/2, 8/2. So how many wholes is that?


Brianna, what's happening? Alondra, what's happening here? Hold on a second, so we've got some friends saying there's more. Brianna, what do you think?
B: 10/2.  
T: 10/2. Tell me about this. So 2, 4, 6, 8, 10. How many wholes is that, Brianna?  
B: 5.  
T: 5. Can we count them and label them?  
A: Yes. 1, 2, 3, 4, 5.  
T: So 10/2 is the same as 5. Alondra...  
A: 12/2.  
T: 12/2. Let's see. What is that? 2, 4, 6, 8, 10, 12. 12/2. So how many wholes is that, Alondra?  
T: 1, 2 3, 4, 5...interesting, so 12/2 is the same as 6. Anthony L.  
A: 14.  
T: 14...so here's my question for everyone on the carpet...14/2, how many wholes? Turn and talk to a partner. How many wholes, and how do you know? How do you know?  
(Students in groups)  
D: Hello, camera. 8 and you take 2 wholes and then you just give 1, so like 2, 4, 6, 8, 10, 12, 14, 16, 18 are all the wholes that we have.  
T: So who's got a thought? Ashley, what do you think?  
A: 7.  
T: 7/2. Or I'm sorry, 7 wholes. So who else thinks it's 7? Gianna agrees. Breanna, Anthony R, Alondra. Ashley, how did you think about 7? How did you know it was 7?  
A: I was looking at...and I noticed that you add 6+6 it's 12...12. It's a half. So I did the same for 14, and I figured out that it was 7.  
T: So you said half of 12 is 6, and so you used that thinking to say half of 14 is 7, so if that thinking works, Ashley, what if we said 16/2. How many wholes is that? Ashley's telling us something really interesting. Well 12, half of 12 is 6. Half of 14 is 7. And then I asked, well if that thinking works...8. Hmm what do you guys think? Janna, do you agree with her?  
J: I agree.  
T: That's interesting. So that would make 8 wholes. So I think we're gonna pause right here, but I wonder if tomorrow, we might notice even more because I was thinking a lot about some things we talked about earlier today...