

Title-funded Tier 2 Intervention  
Grade 2: 2.NBT and SMP3  
Video Look-Fors

What do you notice about:	Teacher	Students
Wait Time		
Teacher Questions		
Sharing Thinking		
Constructing Arguments and Critiquing the Reasoning of Others		
Listening Behaviors		
Explanation and Justification		
<p>What connections can you make with your students, colleagues or teachers you supervise?</p>		

Code	Transcripts
Teacher Higher Order Questioning (TQ)	Mrs. B: <u>What do you think I was thinking? Do you agree? Do you think that should be 68?</u>
Student Share and Critiquing Reasoning (SS/SCrit) TQ	J: (shaking his head) <u>No.</u> Mrs. B: <u>What do you think it should be?</u>
TQ	J: 58 Mrs. B: <u>How did you know that?</u>
Student Explanation (SE)	J: <u>Because I counted 1, 2, 3, 4, 5</u> (jumping on the invisible track) and then 6
SE	Mrs. B: What number did you start with?
Teacher Checking for Understanding (TU)	J: Fives, then 51, 52, 53, 54, (trailing off) 55, 56, 57, 58
Checking for Student Understanding (SU)	(3:41) Mrs. B: <u>So when you said five, did you mean 50?</u> (J nods) (...fifties)
TQ	(3:44) C, <u>what do you think of what he said?</u>
Teacher encouraging Listening Behaviors/ (TL)	C: Mmmm... Mrs. B: <u>do you agree? What did J say? Did you hear him?</u>
TL/TQ	C: (smacks his lips--looking around) Mrs. B: Do you want to go ahead and <u>repeat what you said? What do you think it should be?</u> (3:59)
SE/Justification (SJ)	J: Um, 58, <u>because I started with 50 and then 51, 52, 53, 54, 55, 56, 57, 58, 59, 60.</u>
TL/TQ	Mrs. B: <u>C, do you agree?</u>
SCrit	C: (shakes his head) Mrs. B: <u>You don't agree, what do you think?</u>
Teacher encouraging Listening-Revoice for the benefit of students (TLR)/TQ	C: <u>Because 58 is supposed to go there because</u> if you put 68 there, then it turns to 69 and then 60 doesn't make any sense.
SE/SJ	(4:35) Mrs. B: <u>Oh, so it sounds like you agree with J, but you disagree with me.</u>
TU/TLR	C: Because it's not supposed to be like, because <u>58 is supposed to go there.</u>
SE	Mrs. B: Okay, thank you for sharing your thinking. (4:53)

This exchange is evidence that *promoting math talk and explicitly teaching communication of reasoning positively affects low-performing students' ability to construct arguments and critique the reasoning of others* because as the conversation continues, these students are constructing their responses. What begins as one-word responses, nodding and head-shaking, unfolds as the teacher continues to draw out J and C's reasoning. The teacher continues to cue them with open questions that encourage reasoning:

Do you agree? Do you think that should be 68?

What do you think it should be?

When J answers with "58," she doesn't follow the I-R-E (Initiation-Response-Evaluation) pattern, by ending it with, "good job" and moving on. She continues, instead, using the I-R-Follow-up pattern to probe: "How did you know that?" And the J's thoughts begin to flow, "Because I counted 1, 2, 3, 4, 5 (jumping on the invisible track) and then 6." She asks clarifying questions to encourage precision of his language (SMP 6): "What number did you start with?" And he responds, "Fives, then 51, 52, 53, 54, (trailing off) 55, 56, 57, 58." But she doesn't stop there, then she clarifies by asking, "So when you said five, did you mean 50? (J nods, mutters..."fifties") and then she turns to the partner, unrelentingly, asking C what he thinks and how he knows until he finally expresses his reasoning clearly, "Because 58 is supposed to go there because if you put 68 there, then it turns to 69 and then 60 doesn't make any sense." When teachers structure lessons to encourage this brand of argument and critiquing reasoning, students who are low-performing come to see that mathematics is not about guessing what the teaching wants, it is about sense-making.