

An Introduction from Marilyn Burns and Lynne Zolli

Dear Principals and Administrators,

In *Listening to Learn* interviews, we ask students to solve problems mentally, without using paper and pencil. Students' explanations for how they reason provide important and useful insights for planning instruction. We invite you to watch these samples from interviews in each of the four Content Focus areas in *Listening to Learn*. We hope that our collaboration on interviewing will help teachers learn how their students reason numerically and how to best serve their needs.



MARILYN BURNS



LYNNE ZOLLI

CONTENT FOCUS 1: FOUNDATIONS OF NUMERICAL REASONING

We listen to students count in different ways during the interview—by 1s, by 1s starting at 7, by 2s, and also by 10s.



[Watch Lynne and Alberto](#)

Lynne: Do you know how to count by 10s?

Alberto: Yes! 10, 20, 30, 40, 50. [*Alberto stops here, thinks a bit, then checks in with Lynne.*] Is that good?

Lynne: That's great. [*Lynne waits for Alberto to continue.*]

Alberto: 60, 70, 80... [*Alberto pauses to think and then continues.*]...90. [*Alberto pauses again, remains stuck, and looks to Lynne.*]

Lynne: What do you think would come after 90?

Alberto: [*Thinks some more and then answers hesitantly*] Uh,...a million?

We know that confusion and partial understanding are part of learning. Alberto, who was confident for most of the interview, here showed tentativeness. Taking pauses to think, Alberto finally was able to count by 10s to 90, but he couldn't come up with 100, although he thought for a long time. Alberto would benefit from additional practice with counting by 10s.

CONTENT FOCUS 2: ADDITION AND SUBTRACTION

Interview 5 focuses on adding and subtracting mentally with numbers within 1,000, and this is the first question in the interview.



Watch Marilyn and Michael

Marilyn: What is 99 plus 14?

Michael: *[Answers quickly.]* 113.

Marilyn: And how did you figure that out?

Michael: *[Explains clearly.]* Because I knew 1 more to get to 100, and, um, I minused that from the 14 and I got 13 left from the 14 and I added that with 100. And I just added 100 plus 13.

Michael gave the answer quickly, an indication of his confidence and competence with adding mentally. His explanation revealed his ability to use the benchmark number of 100, an important and useful numerical strategy.

CONTENT FOCUS 3: MULTIPLICATION AND DIVISION

It's important for students to be able to solve contextual problems and word problems are included in all interviews.



Watch Lynne and Asmara

Lynne: *[Reads the problem as Asmara follows along.]* Here's another word problem. Lily and Rocco earned \$17 from their lemonade stand. They shared the money equally. How much money did each of them get?

Asmara: *[Thinks for a bit.]* \$8.50.

Lynne: And how did you figure that out?

Asmara: Because you can't divide \$17 equally, so you have to do...well, so 8 times 2 is 16, so that you can divide equally and break \$1.00 into 50 cents.

From listening to Asmara explain her reasoning in this question from Interview 7, we learn that she can relate division to a real-world situation and solve a problem that involve a remainder. We also learn that Asmara understands how multiplication and division are related.

CONTENT FOCUS 4: FRACTIONS AND DECIMALS

Asking students to compare fractions and decimals reveals how they reason.



Watch Marilyn and Stefaniya

Marilyn: Look at these numbers. Which is greater?

Stefaniya: *[Looks at the question card and thinks for a while.] This one. [Pointing at $\frac{3}{4}$.]*

Marilyn: And how did you decide?

Stefaniya: If you change 0.45 to a fraction, it would be $\frac{45}{100}$. And $\frac{3}{4}$, if you change it so the denominator is 100, it would be 75 out of 100.

Marilyn: So, which one is greater?

Stefaniya: $\frac{3}{4}$.

After Marilyn asked this question from Interview 10, Stefaniya thought for a bit before pointing to $\frac{3}{4}$ on the question card. It's important to practice wait time to give students the time they need to reason. Stefaniya then explained, with ease and clarity, how she changed each number to a fraction with a denominator of 100.

Hear from Marilyn Burns and Lynne Zolli



Watch Marilyn and Lynne
Discuss Using *Listening to Learn*
for Professional Development

LYNNE ZOLLI was a classroom teacher in the San Francisco Unified School District for over forty years and taught grades 1 through 6. She also was a mentor teacher, professional development leader, Math Solutions instructor, and conference speaker. Lynne is a grant writer, an author of Math Solutions professional books, and a co-author of *Do the Math*.

MARILYN BURNS is one of today's most highly respected mathematics educators. Over the course of more than fifty-five years, Marilyn has taught children, led in-service sessions, spoken at conferences, contributed to professional journals, and written more than thirty books and resources for children and educators.



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