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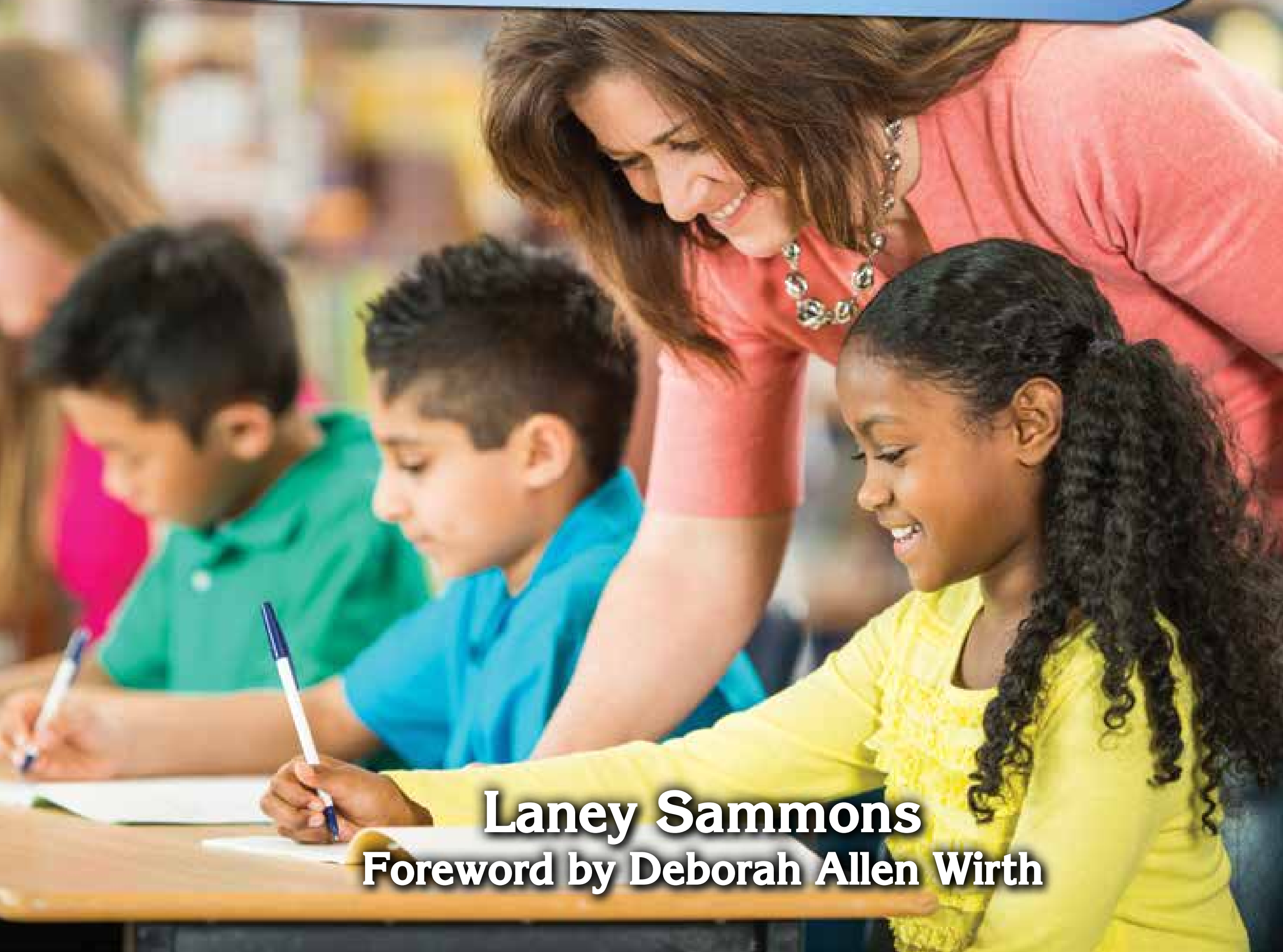
Guided MATH Conferences



Laney Sammons

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Guided MATH Conferences

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Foreword

Thirteen years ago, I was leading twenty-five eager first graders through calendar math as part of our morning meeting. As students contributed a variety of ways to represent the calendar date, one student offered a multiplication number sentence. Knowing I had taught his older brother, I thought this was just a memorized fact he had learned from his sibling. Yet as I delved more deeply into his thinking, I found that not only did he clearly understand the concept of multiplication, but four other students in my first grade class had a firm grasp on this skill, as well! At the same time, several of my first graders were still grappling with one-to-one correspondence. The range of mathematical knowledge was vast. I knew I needed to change the way I instructed my students in mathematics. With the success my students and I experienced with Guided Reading, it became clear that I needed to utilize the parallel strategy of Guided Math.

The transition to a Guided Math classroom was fairly seamless, despite the lack of resources supporting the topic at the time. However, this was only possible because of the trials and tribulations I had worked through to implement Guided Reading. As I tried various structures for implementing the Guided Math strategy, one thing became very clear: I needed to become more intentional about finding out what kids knew mathematically. As Sammons's book clearly reverberates, this is best accomplished through Guided Math conferences.

Sammons's book engages the reader with an easy-to-follow format. Grade-level conferencing snapshots are peppered throughout the presentation of the six conference types: Compliment Conferences, Comprehension Conferences, Skill Conferences, Problem-Solving Conferences, Student Self-Assessment and Goal Setting Conferences, and Recheck Conferences. Sammons's delineation of conferencing types gives teachers a richer perspective with regard to the purpose of conferring. To offer increased insight, she also provides a conference structure so teachers may navigate intentionally through a conference rather than haphazardly muddling through potentially less meaningful exchanges.

Laney Sammons recognizes the challenges teachers face. She tackles these difficulties head-on and presents solutions that are viable in our ever-changing classrooms. She clearly outlines a structure that is practical, simple, and gives assessment *for* learning, rather than solely assessment *of* learning. This, I am convinced, is the hallmark of what we, as teachers, need to implement more readily. Sammons presents a myriad of ways in which Guided Math conferences accomplish this goal.

While I could cite a host of research supporting math conferencing, and I can offer compelling data from my own classroom—100 percent of my third-grade class scored "advanced" on our state's high stakes mathematics assessment—to try to persuade readers to pursue the strategies Sammons presents in this book, the practitioner in me knows that what matters most to educators holding this book right now is this testimony: *Guided Math conferences work!*

This is a must-have resource regardless of where you view yourself on the Guided Math strategy continuum. As a teacher with 29 years of experience and an experienced practitioner of the Guided Math strategy, I thought this book would primarily serve to validate what I already do in my classroom. But as I sat reading Sammons's book one weekend, I found myself eager to get back to my own classroom Monday morning to better incorporate the conferring techniques she outlines. With Sammons's fresh spin on the structure teachers can utilize when incorporating math conferences, I found myself motivated and excited to better meet the needs of my mathematicians. Her conferring framework gives immediate feedback to both the student and the teacher while encouraging both populations to think more deeply and critically. Her book now serves as a foundational framework from which I can become more effective with the Guided Math strategy I have incorporated for more than a decade. Without a doubt, you will be inspired by this compelling resource. Enjoy!

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Acknowledgements

First-time authors usually enjoy a high degree of support. When a family member decides to write a book, it is an exciting event. There is much enthusiasm from the immediate family. Others graciously step in to assume routine household tasks that previously have been done by the author. And then, the whole family shares in a sense of accomplishment when the book is finally published.

When authors choose to continue writing, however, the impact on their families is multiplied and ongoing. What begins as something novel and exciting becomes commonplace. It is only the most fortunate authors who continue to experience the same level of family support. For the ongoing support and enthusiasm of my family, I am so grateful. My love and thanks to my husband, Jack, my daughter, Sorrel, and her family, and my son, Lanier, and his wife, for their patience as I write.

I also wish to thank the many teachers and educational leaders with whom I am privileged to work. I learn so much from them and feel honored to work in their schools and districts—especially when I am invited into classrooms to work directly with their students.

And finally, I would like to express my appreciation to Sara Johnson and Aubrie Nielsen, my editors, and the staff at Shell Education who have contributed to the publication of my books and have allowed me to share my ideas with educators.

When Teachers and Students Talk about Learning

> *When teaching and learning are visible, there is a greater likelihood of students reaching higher levels of achievement.* (Hattie 2012b, 18)

What constitutes good teaching? For decades this has been much debated. Everyone, it seems, has an opinion. Yet there has been no consensus on this issue. Instead, much attention is directed at debating the merits of the latest trends in educational reform. Perhaps, rather than search for reforms, it may be more productive to focus on teaching practices that have been shown to have the greatest positive impact on learning, and then consider ways in which these can be carried out in our classrooms.

In his book *Visible Learning*, John Hattie (2009) reports on what he discovered from his study of more than 15 years of research on what works in schools. In his more recent tome, *Visible Learning for Teachers: Maximizing Impact on Learning*, he examines the attributes of teaching that have the most impact on learning (based on his research synthesis) and explores their implications for teachers. What struck me was his unsurprising—yet rarely articulated—conclusion that *teaching and learning must be visible*. As he puts it, what makes a difference are "…teachers seeing learning through the eyes of students and students seeing teaching as the key to their ongoing learning" (2012b, 14).

Hardly surprising! Rather than a one-size-fits-all script for teaching, student achievement is greatest when teachers strive to find out what their students know and are learning and then adjust their teaching to meet student needs, and when students assume the responsibility for both knowing what their learning goals are and for monitoring their progress toward meeting them.

When teaching literacy, conferring with my students about their reading and writing made their learning much more visible to me. These one-on-one conversations with my students gave me glimpses of their learning through "their eyes." Armed with this knowledge, I could then adjust my teaching to make it more effective.

Moreover, conference conversations also served to focus my students' attention on what I was teaching and why it was important to them. They began to more clearly recognize that the teaching points during the conference were crucial to their learning. Because they were expected to talk with me about their learning, they became more cognizant of it and began to assume a greater responsibility for monitoring it.

To me, there is an obvious connection between Hattie's conception of visible teaching and learning and the practice of teacher and students conferring. The benefits of these conferences are not limited to literacy. Good teaching is good teaching—across the content areas! The same conferring techniques that have been so effective for literacy are a crucial component of the Guided Math framework. These thoughts led me to write this book. And, assuming Hattie's findings are valid, the increased visibility of both teaching and learning which results from math conferences will lead to greater mathematical achievement for students.

Chapter 1

Conferring with Young Mathematicians

Just as students come in all shapes and sizes, with distinctive personalities, quirks, senses of humor, and sensitivities, they also come into our classrooms with unique background knowledge and instructional needs. Somehow we manage to adapt our instruction each year as these young learners enter our classrooms—not only adapt, but truly delight in the diversity that enriches the learning environment we so carefully construct.

Realistically, however, the vast differences in foundational knowledge and skills of students pose challenges—challenges that are intrinsic to the profession of teaching. How do we gain insights into the thinking of our students, discover what they know, what they can do, what misconceptions they have, what struggles they face, and what concerns they harbor? The intimate nature of small classes allows astute teachers to establish close relationships with their students in which they acquire something of a true measure of their students' learning strengths and needs through observation and discussions. Building on that measure, differentiation of instruction flows naturally.

With larger class sizes, the task of accurately assessing the complex and unique individual learning needs of our students is more difficult. Opportunities to closely observe their work are limited, as are in-depth student-teacher conversations during lessons, especially during whole-class lessons. In some ways, a classroom full of students is analogous to an orchestra. When twenty-five or thirty students are each playing their own scores, the blended sound of the whole orchestra makes it almost impossible to distinguish the sounds of individual instruments. Nuthall (2005, 919) found that unlike conductors who can sometimes pick out the sounds of individual musicians, teachers in such settings are "largely cut off from information about what individual students are learning" and "are forced to rely on secondary indicators such as the visible signs that students are motivated and interested."

Diagnostic tests, benchmark tests, and other paper-and-pencil assessments may give us some guidance, but they frequently fail to expose students' thinking or provide deeper insights into their background knowledge. Too often, these methods of assessment let us know only whether students were able to find or choose the correct answers—not necessarily whether they really *know how* to find the answer or whether they have any misconceptions. Paper-and-pencil assessments do not often shed much light on the depth of students' understanding of mathematics.

A Tale of Four Students

To illustrate the limitations of these assessments, consider the mathematics assessment results of four hypothetical students on a written multiple-choice test. Two of these students chose the correct answer for a question, while two others chose an incorrect answer. Since the assessment was not an open-response test, what does their teacher *really* know after grading this assessment? Did the students who chose the correct answer know how to solve the problem? In this case, one of these students chose the answer solely by chance. The other found the correct answer using incorrect reasoning. Based on the correct answers, one might assume that both students understood the concepts or skills being tested, while in fact, neither of them did.

On the other hand, consider the two students whose answers were incorrect. In this hypothetical, one of the two really understands the concepts involved and knows how to solve the problem, but made a simple error in computation. He may have been tired on the day of the test, or possibly lacked the motivation to fully work out the correct answer. Perhaps he was ill or troubled about something in his personal life. But the isolated assessment results give a false indication of his level of knowledge.

Finally, the last of these four students had absolutely no idea how to find the correct answer. But from the written test, how do we know that for certain? When a student's answer is incorrect, we need to know why. Where did the young learner go wrong? What gaps in knowledge or skills prevented the student from being able to find the answer? Meaningful, relevant instruction for students can only be planned and delivered when these questions are answered.

The confusion about the mathematical ability and learning needs of these four students is obvious even when considering their answers to just one question. The lack of precision in targeting instructional needs only increases when an assessment is composed of many questions. This kind of assessment may offer teachers a snapshot of the overall achievement of their students, but little specific guidance concerning the instructional needs of individual learners.

Open-response assessments yield a clearer picture of what students can and cannot do, as well as what they do and do not understand. Although the results from these assessments may inform our planning of instructional "next steps" for individual students based on their needs, our descriptive feedback to students is often delayed. And even with this assessment format, we are routinely in a position of having to guess exactly what our students' thoughts were as they worked—particularly with students whose ability to communicate mathematically is limited.

But what about assessing student understanding during class discussions? Won't students' oral responses provide us with more transparent evidence of their thinking? After all, most of us ask questions frequently during lessons to gauge student comprehension. Too often, however, even with the use of questioning, it is difficult to clearly discern what students are thinking. Marilyn Burns (2005, 27) shares her early experiences as a teacher:

> *…when students answered questions correctly I usually accepted their responses with a nod or comment of approval, rarely prodding them to explain their reasoning. When students were incorrect, however, I was more likely to probe further by asking, "Are you sure about that?" or "Why do you think that's right?" Follow-up prompts like these then became signals to the students that their response was not correct or acceptable.*

Even when using discovery learning, Burns found that she failed to probe students' levels of understanding when correct answers were given to her questions. She states, "I never really knew what students were thinking or whether their correct answers masked incorrect ideas. I only knew that they had given the answer I sought" (2005, 27).

When we ask probing questions of our students during class discussions, we may indeed learn what one or two, perhaps even three, students are thinking, but it is folly to assume that those thoughts accurately represent the thinking of the entire class. Yet without more in-depth knowledge, we are bound to fail in our mission of meeting the needs of all our students.

A Glimpse into Student Thinking

Literacy teachers have long been familiar with student-teacher conferences. Conferring with young learners is integral to both reading and writing workshop (Anderson 2000; Calkins 2000; Calkins, Hartman, and White 2005; Graves 2003; Serravallo and Goldberg 2007). Young learners share their thinking about their personal reading or writing in one-on-one conversations with their teachers. Not only do teachers discover much more about their students' capabilities and next steps in learning, but close bonds between students and teachers are also formed.

The benefits of student-teacher conferences are not exclusive to literacy instruction. Sound instructional practices span the content areas. Serravallo and Goldberg (2007, 1) describe their beliefs about reading as follows:

- Reading is the act of constructing meaning.
- Reading is a process.
- Reading is deeply personal and, therefore, varies from reader to reader.

Indeed, mathematical work is very similar. Mathematicians engage in constructing meaning from their prior and current mathematical experiences to understand new concepts and solve problems. They participate in a process as they determine meaning, make connections to other areas of mathematics, and draw upon their background knowledge. They employ strategies they have acquired to deepen their knowledge and to find solutions to problems. And finally, understanding mathematics is deeply personal and varies from mathematician to mathematician. That is not to say that there are not constant mathematical principles, but an individual's perspectives, modes of learning, and previous experiences combine to make his or her approach to comprehending mathematical concepts and problem solving entirely unique.

Furthermore, with these beliefs about reading in mind, Serravallo and Goldberg (2007, 7–8) conclude that effective reading instruction should:

- match the individual reader;
- teach toward independence;
- explicitly teach strategies;
- value time to experience reading; and
- follow predictable structures and routines.

These beliefs about reading instruction may be easily adapted to describe effective mathematics instruction. As mathematics teachers, we are most effective when our instruction matches our individual learners, we teach toward independence, we explicitly teach strategies, we value time for our students to explore challenging mathematical problems and concepts, and we establish and then maintain predictable structures and routines.

Because of their beliefs about reading and reading instruction, Serravallo and Goldberg (2007) understand the importance of one-on-one reading conferences, in which instruction is targeted specifically to student strengths, nudging young learners to the edge of what they are just beginning to be able to do, and supporting them as they begin to independently apply new strategies they have learned. The intimate nature of conferences allows teachers to know their students so well that their teaching points for each student are at an instructional level that is most appropriate to the student's immediate needs and current developmental phase.

Thus, in many ways, conferring with students is the heart and soul of teaching (Sammons 2010). According to Calkins, Hartman, and White (2005, 6), "It gives us an endless resource of teaching wisdom, an endless source of accountability, a system of checks and balances. And, it gives us laughter and human connection—the understanding of our children that gives spirit to our teaching." Conferring gives teachers true glimpses into the thinking of their students—whether it be thinking about reading, writing, or mathematics. With these glimpses, our instruction becomes more focused and powerful.

What Are Guided Math Conferences?

The Guided Math framework (Sammons 2010) is composed of seven components: establishing a classroom environment of numeracy, math warm-ups, whole-group instruction, small-group instruction, math workshop, math conferences, and assessment. (See Appendix A for a description of each component of the framework.) Together, these instructional tools offer teachers a manageable means of identifying and then meeting the mathematical needs of their students. One-on-one math conferences are valuable for accurate assessment of student strengths and needs, and for targeting individual needs through timely feedback and brief specific instruction—thus, they are an important support for the other six components. Even in classrooms where the Guided Math framework is not being used, conferring one-on-one with students gives teachers rich insights into their students' mathematical thinking as well as opportunities to provide effective, targeted instruction and offer constructive feedback.

Math conferences are one-on-one *conversations* with students about their mathematics work, as one mathematician talking with another. Literacy educators have written much about successfully conferring with students. Murray (2004, 148) emphasizes the importance of maintaining a conversational tone during conferences. "They are not mini-lectures but the working talk of fellow writers sharing their experience with the writing process. At times, of course, they will be teacher and student, master and apprentice, if you want, but most of the time they will be remarkably close to peers…."

Like conversations, conferences between teachers and students include these characteristics (Anderson 2000):

- Conferences have a purpose.
- Conferences have a predictable structure.
- Lines of thinking are pursued with students.

- Teachers and students each have conversational roles.
- Students are shown that teachers care about them.

We show our genuine interest in the work of our students when we confer. Sitting side-by-side and shoulder-to-shoulder with our students, we dig deeper so we can meet their unique, individual needs. In doing so, we support them as they begin to apply what they are learning in both large-group and small-group lessons (Miller 2008). The thoughtful conversations we create get to the core of their thinking and then prompt them to consider what they are doing from other angles or with more depth.

Math conferences are a time for students to share their mathematical thinking with their teachers. In doing so, they learn not only to organize and express their mathematical ideas cogently, but also to continually reassess the validity of their reasoning. Moreover, these mathematical conversations support the learning of new concepts and strategies by requiring that students focus on representing their work, both verbally and with diagrams, models, or symbols so that it can be clearly understood by others. All of these are essential aspects of mathematical practice (Common Core State Standards Initiative 2010; National Council of Teachers of Mathematics 2000).

Math conferences are also a way of extending and deepening the numeracy of our students. Allington (2012) describes the ability to go beyond word calling, simple recall, and recitation when reading as *thoughtful literacy*. It requires a reader to engage with the ideas in a text, challenge them, and then reflect on them. When conferring with students, we foster that same kind of understanding of mathematics—*thoughtful numeracy*, the mathematical counterpart to thoughtful literacy. We help students develop the mathematical skills they need to cope with the practical demands of everyday life (Steen 1990). With that goal in mind, these conversations between students and teachers serve to increase the capacity of young mathematicians to effectively engage in mathematical thinking and problem solving, critically consider the mathematical data and the reasoning of others, and clearly communicate their own mathematical thinking, so that they will be able to successfully apply the knowledge, skills, and strategies they have acquired to new situations and problems they encounter throughout their lives (Saskatchewan Ministry of Education 2009).

Guided Math Conferences, Math Interviews, and Small-Group Instruction

Instructional strategies for teachers abound. As we focus on conferring with students about mathematics, it is important to distinguish between math conferences, math interviews, and small-group instruction. All three share important characteristics and have a place in the Guided Math framework, but each is unique in many ways. Although all of these instructional elements afford teachers opportunities to build relationships with their students, encourage mathematical communication, and assess student understanding, they vary in the amount of time required, the participants involved, the focus of the conversations, and their primary functions. A summary of the comparisons that follow can be found in Figure 1.1.

Guided Math Conferences vs. Math Interviews

Looking first at math conferences and math interviews, both are one-on-one conversations between a teacher and a student. They are valuable forms of assessment during which teachers learn more about the mathematical understanding and capability of their students. They both uncover students' misconceptions and gaps in understanding that may not be apparent when relying only on the written work of students. According to Burns (2010, 19), her experiences with student interviews were "revealing and sometimes astonishing," exposing "the fragile conceptual base of [students'] understanding that their teacher had no way of knowing from the context of the classroom lesson." Thus, the information from both conferences and interviews can serve to guide instructional decisions. In addition, both techniques are powerful ways in which teachers can connect more deeply with their students as students share their mathematical thinking with the teacher.

In spite of the similarities, however, there are some distinct differences between these two instructional practices. Although math interviews are not a part of the Guided Math framework, they can be used for diagnostic assessment in a Guided Math classroom. In math interviews, the main focus of conversation is a given task proposed by the teacher during the interview based on a "big idea," with specific questions to determine the degree of student understanding and to expose any existing misconceptions. The primary function of the interview is that of assessment to inform later instruction (Moon and Schulman 1995). No feedback is given to students during the interview. Instruction based on strengths and needs that are uncovered during the interview is delivered at a later time. The length of time required for an interview is usually about ten to fifteen minutes.

In contrast, math conferences are usually about five minutes in length. The focus of the discussion between the student and teacher is the mathematics with which the student is currently working. With this conversation, the teacher is conducting research to discover both student strengths and needs. The teacher uses this information to provide immediate, specific feedback and to decide on an appropriate instructional "next step" for the student. Then, within the conference itself, the next step is taught. As such, the major functions of the conference—assessment, feedback, and instruction—are entwined.

Both math conferences and math interviews offer teachers excellent ways to probe student thinking—going deeper than is possible in large-group or even small-group instruction. Because of the brief nature of math conferences, however, teachers are able to conduct them more frequently and more spontaneously throughout the school day. This flexibility is a considerable advantage to teachers whose instructional time is already strained by ever-increasing demands.

Math Conferences vs. Small-Group Instruction

Both math conferences and small-group instruction are essential components of the Guided Math framework (Sammons 2010, Sammons 2012). Although they are both powerful tools for teachers, the differences between the two are many—in the participants involved, the durations, the focuses, and the functions.

The small-group instructional format involves the teacher meeting with groups of two to six students with similar instructional needs for fifteen to twenty minutes (Fountas and Pinnell 1996 and 2001; Sammons 2010). Working in their "zone of proximal development," learners supported by the teacher expand and extend their mathematical understanding and capabilities (Vygotsky 1978). Teachers present brief mini-lessons about concepts or strategies to be learned and then actively engage students in practice requiring the young mathematicians to stretch just beyond what they can do successfully on their own.

Throughout the small-group lesson, teachers provide just enough support to move their students to a higher level of independent mathematical competence. The primary focus of the small-group format is the lesson itself, planned to meet the needs of the members of the group. As the lesson is presented, teachers are also able to informally assess student learning and to offer feedback based on the student work observed and the conversations that arise. In addition, small-group lessons "nurture joy, rigor, and empowerment" and inform other components of mathematics instruction (Wedekind 2011, 26), all of which are essential to effective implementation of the Guided Math framework.

While the worth of small-group instruction cannot be overstated, the intimacy of a one-on-one conference is absent in this setting. When conferring with students, teachers meet with just *one* student at a time. They ask students to tell them about the mathematics with which they are currently working, informally assessing student understanding and skills to identify both strengths and needs. As individual needs are discovered, teachers try to determine the best immediate instructional "next step" for these students. Which of the student needs noticed by the teacher can be most effectively targeted in the brief conference? And then, how can that teaching point best be conveyed to the student?

An integral part of conferences is immediate and specific feedback for students. Teachers share with them both something they have done well, in the form of an authentic compliment, and what they can do to make their work better or to increase their understanding. A learning goal, usually an incremental one given the brief nature of a conference, may be suggested. Along with the timely feedback, teachers might share a new strategy, correct a misconception, model mathematical communication, or demonstrate a process to address the specific teaching points for the young learners with whom they are conferring. Thus, within the Guided Math conference structure, teachers assess, give feedback, and teach a logical "next step."

The opportunities to give individual students both specific feedback on their mathematical work *and* instruction that targets the unique teaching points of individual students during a small-group meeting are rare. So in addition to the differences in the number of students involved, the time required, and the focus of small-group instruction and math conferences, a major advantage of the conference format is the ability to promote specific individual learning. A challenge, however, is creatively finding the time to engage in these mathematical conversations with students on a regular basis.

Figure 1.1 Comparisons of Math Conferences, Math Interviews, and Small-Group Instruction

Format	Time	Participants	Focus	Function
Math Conference	About 5 minutes	Teacher and 1 student	Student's current work	• Assessment • Feedback • Individual Instruction (Teaching Point)
Math Interview	About 10–15 minutes	Teacher and 1 student	Instructional task introduced by teacher	Assessment
Small-group Instruction	About 15–20 minutes	Teacher and 2–6 students	Group lesson (based on identified needs of the group)	• Group instruction (Focus lesson) • Assessment • Feedback

Snapshot of a Math Interview

Terrence has recently enrolled in a second-grade class. Although his teacher received Terrence's grades from his previous school, she hopes to gain a little more insight into her new student's understanding of place value by conducting a math interview. As her other students are engaged in independent work, she sits down one-on-one with Terrence.

Teacher:	*Terrence, I am so happy you have joined our class. As a teacher, I really try to discover what my students think when they work as mathematicians, so that I will know how to best help them learn math. Thank you for being willing to talk with me for a few minutes.*
Terrence:	*That's okay. I'm not great at math though.*
Teacher:	*Well, don't worry about what we are doing today. Just answer the questions I ask as best you can.*
Terrence:	*Okay.*
	The teacher places two sticks of ten linking cubes each and 4 individual cubes on the table. On a white board, she writes 24.
Teacher:	*Please read this number.*
Terrence:	*Twenty-four.*
	The teacher points to the 4.
Teacher:	*Please show me what this part of the number represents using the cubes.*
	Terrence gathers together the four individual cubes.
Teacher:	*Tell me why you chose those cubes.*
Terrence:	*It's a four. So I got the four cubes. One, two, three, four.*
	The teacher then points to the two.
Teacher:	*Now, show me what this part of the number represents.*
	Terrence chooses the two sticks of ten linking cubes.
Terrence:	*That's easy! Twenty is two tens.*

	The teacher removes the cubes and replaces them with three sticks of ten linking cubes and fifteen individual cubes. She writes the number 45.
Teacher:	*Please read this number.*
Terrence:	*Forty-five.*
	The teacher points to the 5.
Teacher:	*Please show me what this part of the number represents using the cubes.*
	Terrence chooses five individual cubes.
Terrence:	*Five! Five cubes—One, two, three, four, five.*
	The teacher points to the 4.
Teacher:	*Please show me what this part of the number represents using the cubes.*
	Terrence looks confused and stares at the cubes.
Terrence:	*Is this a trick question?*
Teacher:	*Why do you think that?*
Terrence:	*Because you only put out three tens! I can't show you four tens when there are only three of them.*
Teacher:	*I see. Let's talk about this idea on another day because it's time to stop our interview for today. Thank you for working with me on these numbers.*

The teacher discovered that Terrence can correctly read the double-digit number she wrote. He has a beginning knowledge of place value, but needs more work with ones and tens to understand that ten ones has the same value as a ten.

Because the interview was intended as an assessment of Terrence's understanding of place value to inform future instruction, the teacher gave Terrence no feedback on his responses, nor did she correct his misconceptions. The information the teacher obtained will be used to place Terrence in a small group of students with similar instructional needs.