



Bridges Administrator Workshop

K-5



The MATH LEARNING CENTER

Salem, Oregon

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Preface

Authentic and enduring learning occurs when the teacher is an active agent in the process—not passive, nor an audience, not a client or a collector. Teacher learning becomes more active through experimentation and inquiry, as well as through writing, dialogue, and questioning. Thus, the school settings in which teachers work must provide them with the opportunities and support for becoming active investigators of their own teaching.

Lee S. Shulman, *The Wisdom of Practice*

This handbook is meant to help you support your staff in implementing the Bridges in Mathematics curriculum fully and successfully. The most important things you can do to ensure successful implementation are

- a) provide teachers with the time, materials, and professional development required to implement the curriculum faithfully and in its entirety, and
- b) conduct effective classroom visits followed by meaningful and productive conferences with individual teachers to help them reflect upon and improve their practice.

This handbook is divided into two parts, one devoted to each of these two major goals.

Part One: Setting the Stage for Success with Bridges

Administrator & Teacher Responsibilities

Implementing a new curriculum is exciting and challenging. The process introduces a variety of new responsibilities for everyone involved, particularly in the first few years. Because you are in a leadership position, it is your responsibility to set a positive tone for the implementation process and to make sure everyone has what they need to meet their respective responsibilities. At some point early in the school year, make sure that everyone understands what their responsibilities are and how they will be held accountable for meeting them. See the pages in parentheses for more details about the responsibilities on the chart below.

Administrator	Grade-Level Lead Teachers	All Teachers
<ul style="list-style-type: none"> • Arrange for teachers to attend Getting Started Workshops in the summer. (p. 3) • Designate at least 80 minutes per day in the schedule for math instruction for all grade levels. (p. 2) • Order consumable student books if possible to minimize photocopying. (p. 2) • Designate staff development time for Implementation Meetings throughout the year. (pp. 3–5) • Conduct an Implementation Launch Meeting in mid-September. (p. 4) • Review books and support material, including those on the Math Learning Center Web site, to become more familiar with the curriculum. (pp. 5 and 6) • Visit classrooms during math instruction. (pp. 7–9) • Conduct several formal classroom observations with each teacher. (pp. 9–12) • Follow each observation with a non-evaluative professional conversation. (pp. 11 and 12) 	<ul style="list-style-type: none"> • Confirm that each teacher at that grade level has a complete Bridges kit. Each kit comes with an inventory list that teachers can use to be sure that their kits are complete. • If teachers at your school will be conducting the Teacher-Led Implementation Meetings, confirm that teachers have signed up for roles for each meeting (this will happen in the administrator-led Implementation Launch Meeting) and remind them of their roles before each meeting. • Complete all responsibilities in the column to the right. 	<ul style="list-style-type: none"> • Use the inventory list included with the Bridges kit to confirm that the kit is complete. • Read the Getting Started manual. • Set up the Number Corner completely. • Be ready to use all elements of the curriculum beginning on the first day of school. • Establish an organizational system for all Bridges materials (suggestions are provided in the Getting Started manual). • Meet regularly with the administrator to discuss implementation, get support, and set goals.

Scheduling Daily Math Instruction

You'll need to design your daily school schedule so that teachers at every grade level have an hour and twenty minutes each day for math: they'll need about 20 minutes for the Number Corner and a full hour for the Bridges lesson. You could set aside an 80-minute block so that teachers can teach Number Corner and the Bridges lesson one after the other. However, many teachers prefer to split these lessons into two blocks: one 20-minute period for Number Corner and then a separate hour-long block for the Bridges lesson during another part of the day.

If you feel anxious about setting aside this much time for math, do keep in mind that Bridges integrates many elements of language arts, social studies, visual art, and science into its units.

Materials Management

Try to purchase the following supplies, which teachers will find very helpful for organizing their Bridges materials. Alternatively, you could give each teacher some money to purchase these supplies.

- re-sealable plastic bags to store the manipulatives that come in the Bridges kits (We recommend bags that do not have the zipper piece, which can break off too easily. It's also helpful to punch a hole in each bag so that they release the air and don't pop.)
- hanging folders and file folders for storing and organizing handouts and overheads

Most grade levels of the curriculum include consumable student workbooks. The Bridges kits come with an unbound master copy of each workbook, which teachers can use to run copies of the books for their students. If you can, purchase class sets of these books instead to save teachers the time and energy involved in running the copies and keeping them organized. Many schools have found that it is less expensive to purchase the books than it is to have teachers run copies of them for all of their students.

Parent and community volunteers can help with materials preparation. Anything you can do to generate support in the community and organize volunteers will help the teachers in your school focus on teaching and learning.

Training & Professional Development for Teachers

Getting Started Workshops

Teachers who will be teaching Bridges for the first time will find it valuable to attend a Getting Started Workshop in the summertime. These one-, two-, or three-day workshops help prepare teachers to begin using the curriculum in the fall. Visit the Math Learning Center's Web site to learn more about setting up a Getting Started Workshop for your teachers or signing up for an open-enrollment Getting Started Workshop.

www.mathlearningcenter.org/development/overview.asp

Monthly Implementation Meetings

In addition to professional development that prepares them to teach the curriculum for the first time, teachers benefit greatly from ongoing professional development that supports them for the entire first year they are implementing the curriculum. The Professional Development section of the Math Learning Center Web site provides more information about contracting with the Math Learning Center to provide this kind of ongoing professional development. Alternatively, free resources available on the Math Learning Center Web site make it possible for schools and districts to conduct their own professional development during their first year implementing Bridges. The two kinds of resources are described below. You can get more information and download the materials at:

www.mathlearningcenter.org/resources/materials/implementation.asp

Facilitator-Led Implementation Meetings The Math Learning Center provides free guides that facilitators, such as district math specialists, can use to conduct monthly meetings for groups of about 10 to 45 teachers at a single grade level. In each two-hour meeting, the facilitator helps teachers prepare for the upcoming unit and month of Number Corner by providing an overview of the lessons, doing some model teaching, generating solutions to challenges teachers have encountered, and more. The guides, which can be downloaded for free from the Math Learning Center Web site, include detailed meeting plans and handouts.

Teacher-Led Implementation Meetings If your district has not planned a series of Facilitator-Led Implementation Meetings (described above), you can help the teachers in your school conduct their own meetings. The free Teacher-Led Implementation Guides on the Math Learning Center Web site help teachers conduct bi-monthly meetings in grade-level teams at their own schools. In each hour-long meeting, teachers prepare for the upcoming Bridges unit or month of Number Corner by clarifying the learning objectives, sharing the responsibility of preparing materials ahead of time, and generating solutions to challenges they have encountered in using the curriculum. The guides, which can be downloaded for free from the Math Learning Center Web site, include detailed meeting plans, handouts, and organizational tools.

The Administrator’s Role in Implementation Meetings Regardless of which kind of Implementation Meetings your teachers will be attending, you’ll need to conduct a launch meeting early in the first month of school to introduce the meetings, set school-wide expectations about the outcomes of the meetings, and review the year-long schedule of meetings with your teachers. Plans and handouts for the launch meeting are available for free download on the Math Learning Center Web site.

You’ll also need to ensure that teachers have enough staff development time set aside for these meetings throughout the year. If your district is using the Facilitator-Led Meetings, someone at the district level will have to establish the schedule of meetings. If your school is using the Teacher-Led Meetings, you will need to establish a schedule for the meetings. (See the Yearlong Schedule (AT 1.1 and 1.2) to see the exact time requirements for these meetings.) We recommend setting aside faculty meeting time and using established staff development days for these meetings. Most grade levels will have two hour-long meetings each month, while first and second grades will have just one meeting in one or two months of the year, because they have fewer units in their Bridges curriculum.

To stay informed about what is happening in these meetings (Teacher-Led or Facilitator-Led), visit them. Your presence at these meetings will demonstrate your support for teachers, convey the importance of the meetings, keep you informed, and give you a chance to hear how the implementation is going. If your school is using the Teacher-Led Implementation Meetings, you might also want to collect a work product from each meeting as a way to stay informed, as well as to hold teachers accountable for conducting these meetings in a productive, focused way. We recommend having teachers give you a copy of the following work products:

Work Products from Teacher-Led Unit Implementation Meetings

Instruction & Assessment of Key Learning Objectives Sheet
Sharing Responsibilities Sheet

Work Products from Teacher-Led Number Corner Implementation Meetings

Sharing Responsibilities Sheet

Familiarizing Yourself with the Curriculum

To get a sense of what your teachers will be doing this year, take as much time as you can to browse through the Teachers Guides at each grade level. If you’re pressed for time, reviewing the materials for Grades 1 and 4 should give you a good sense of what the curriculum entails at the lower and upper grades. Take a look at both the Bridges and Number Corner Teachers Guides.

The Math Learning Center Web site also includes a wealth of information and resources that can help you develop a big-picture understanding of the curriculum and how to support it. The chart on the next page highlights those parts of the site that are likely to be most useful to you.

Math Learning Center Web Site Highlights

<p>About Bridges in Mathematics</p> <p>www.mathlearningcenter.org/curriculum/bridges/about.asp</p>
<p>Provides a description of the Bridges K–5 curriculum and includes links to a wide variety of resources that can help you learn more about the curriculum.</p>
<p>Bridges Components</p> <p>www.mathlearningcenter.org/curriculum/bridges/components.asp</p>
<p>Describes the different pieces—whole group lessons, student workbooks, games, and more—that make up the complete Bridges curriculum. Click on the grade level links to see what mathematical topics are covered at each grade level and to review sample lessons from that grade level.</p>
<p>Bridges in Mathematics Implementation Support</p> <p>www.mathlearningcenter.org/resources/materials/implementation.asp</p>
<p>Describes the Teacher- and Facilitator-Led Implementation Meetings, as well as this Administrator Handbook. Click on the grade-level links to see a list of documents—including a yearlong meeting schedule, meeting guides, and handouts—that anyone can download for free to get started with the Implementation Meetings.</p>
<p>Support for Families: An Orientation to Bridges</p> <p>www.mathlearningcenter.org/resources/materials/parents.asp</p>
<p>Although it is written for families, the FAQ on this page will probably be helpful for you. It provides clear answers to common questions about the curriculum, which you can use to help respond to family members' questions; you can even recommend that interested family members visit this page. Click on the grade-level links for resources that families can use to help their students, including a math glossary for homework, online skills practice games, and unit overviews with sample problems.</p>
<p>Support for Materials</p> <p>http://www.mathlearningcenter.org/resources/materials/default.asp</p>
<p>This page includes links to a wide variety of resources that support the curriculum, including grade-level resources and supplemental lessons that bring Bridges into complete alignment with standards from a number of specific states.</p>

Part Two: Working with Teachers

When implementing a new curriculum, teachers are often tempted to integrate bits and pieces of the new material into what they were already doing, instead of implementing the curriculum fully and faithfully from the start. This kind of gradual implementation, while less demanding than complete implementation, tends not to be very effective in bringing about significant change. In his book *Leading Change in Your School*, Doug Reeves explains that incremental change perpetuates business as usual, because it requires a low level of commitment from those implementing the change. In reviewing the research, Reeves found that “only deep implementation had the desired effect on student achievement.”

Deep and sustainable change requires deep and sustained commitment to the change. If Bridges in Mathematics is to improve students’ mathematical understanding and achievement, your teachers must commit to implementing the curriculum fully and faithfully from the start. This requires that they teach *all* parts of the curriculum using the teaching methods described in the Teachers Guides.

To implement the Bridges curriculum faithfully and completely, all of the teachers in your school will require support from you, their colleagues, and the school community. Early in the year, you’ll spend a good deal of time familiarizing yourself with the Bridges curriculum and ensuring that teachers have the materials and professional development they need to implement it fully. By October, you’ll begin using classroom visits and individual conferences with teachers to determine a) whether teachers are implementing Bridges fully and faithfully and b) what you can do to support teachers in using the curriculum and improving their practice. Part Two of this handbook will explain what to look for as you visit classrooms throughout the year, as well as how to talk with teachers about their practice.

Conferencing with Individual Teachers

For the first half of the school year, try to check in with each teacher for a few minutes on a monthly basis to make sure they are getting the support they need to implement the Bridges curriculum. Also ask them to tell you about anything exciting that has happened in their classrooms: meaningful math learning, interesting mathematical discussions among students, and the like. You might also devote a few minutes in every staff meeting to finding out what teachers need in order to implement the curriculum fully; invite them to write what they need on a sticky note, post it in a central location, and then address teachers’ needs after everyone has posted a contribution. These brief conversations may reveal that teachers need more support from you and other members of the school community.

In addition to these quick check-ins, you’ll have more in-depth conversations with teachers about their instruction. In the first half of the year, these conversations will follow the walk-throughs you’ll do in each classroom. In the second half of the

year, the conferences will follow formal classroom observations, providing an opportunity for you and the teacher to talk about what you observed during the classroom visit.

Walk-Throughs

Starting in September, make short, frequent visits to all of the classrooms in your school during math time. When visiting classrooms, you might see teachers and students engaged in whole-group lessons, partner games, small group work, individual activities, or any variety of assessments. Each walk-through should take just a few minutes, involving a quick glance into the classroom to see how things are going. Because each one is so short, you should be able to visit quite a few classrooms during math time in a single day. Do a walk-through in each classroom between one and four times per month. (See the Yearlong Schedule (AT 1.1 and 1.2) for specific recommendations for each month.)

Preparing for Walk-Throughs

Walk-throughs will give you a chance to see how thoroughly the teachers are implementing the Bridges curriculum. To make this judgment call, you'll need to know what you're looking for when you visit a classroom. Before embarking on your walk-throughs, review the Guide for Walk-Throughs, which lists indicators that Bridges is being implemented fully and faithfully in a classroom. Early in the year, you might expect to see one or two of these indicators in a single visit; as the year goes on, expect to see more indicators over time and in each visit. Be sure to give teachers a copy of this form before you visit their classrooms.

Conducting Walk-Throughs & Follow-Up Conversations

Take copies of the Guide for Walk-Throughs (AT 2.1 and 2.2) when you visit classrooms, and use them to structure your observations and make notes. We recommend using the same sheet for a month's worth of walk-throughs for a single teacher. Keep in mind that you won't see all the indicators in a single visit: you might use a different color pen to make notes for each walk-through in the month.

Meet with each teacher for a brief (5 to 10 minutes) conversation as soon as possible after the walk-throughs. An effective way to begin these conversations is to point out something you observed about students' mathematical learning (or struggles later in the year) and then ask the teacher to reflect on your observation. Focusing on students helps the conversation stay objective.

Formal Classroom Observations

In January, you'll begin conducting formal, monthly classroom observations and follow-up conferences with teachers. Plan to observe and meet with several teachers in January. Starting in February, try to observe and then meet with every teacher

once a month. These observations, each of which should take between 20 and 30 minutes, are more focused and detailed than the quick walk-throughs (which you will continue to do a few times each month through the end of the year).

Preparing for Formal Classroom Observations

Before visiting a classroom for an observation, find out what lesson you will be observing and then borrow the Teachers Guide to read the lesson. This will give you a clear sense of what the teacher is working from, as well as what you should expect to see the teacher and students doing during the observation. You should also talk to the teacher ahead of time to collaboratively define an area of focus for your observation, perhaps an element of the teacher’s practice he or she is trying to improve. This conversation can be short but should result in a clear, meaningful, and concise focus for the observation. You can use the Observation Form (described on page 11) to help identify possible areas of focus.

You’ll also want to prepare for formal observations by studying the Teacher Capacity Rubric, starting with the *integrated* level and then reading over the entire document. Do *not* take the rubric with you to classroom observations or use it as a check-off device for evaluating teachers: it is far too detailed. Instead, the rubric identifies the characteristics of a high-functioning Bridges classroom and illustrates the progression from routine to masterful implementation of the curriculum. Give teachers a copy of the rubric before you initiate formal observations in January.

The four categories on this rubric describe the degree to which teachers are using the Bridges curriculum *as it is meant to be used*. The baseline assumption is that all teachers are using the curriculum fully, that is, using all components of the curriculum, including the student materials and manipulatives. You might discover in the course of an observation that a teacher is not using all parts of the curriculum. If so, you’ll need to help the teacher use the curriculum fully before you can use this rubric to evaluate how extensively he or she is incorporating the curriculum’s pedagogical approach into his or her practice. The four categories on the rubric are defined below.

Routine: The teacher’s practice is not consistent with the pedagogical approach of the curriculum.

Refined: The teacher utilizes elements of the curriculum’s pedagogical approach in his or her practice.

Integrated: The teacher consistently employs all elements of the curriculum’s pedagogical approach.

Master: The teacher skillfully and seamlessly applies the curriculum’s pedagogical approach in his or her practice.

At a given point in time, elements of a single teacher’s practice will likely fall into a few categories: for example, the teacher might be *refined* in terms of questioning strategies, but *routine* in terms of fostering a learning community. Similarly, a teacher may exhibit traits from a few categories in a given realm of practice: for example, showing some master traits and some routine traits. When considering which category applies to that teacher, try to develop an overall picture of that teacher’s practice. Once teachers have demonstrated certain traits, keep paying attention to that trait to see if they continue to demonstrate it in subsequent classroom observations.

It will probably take a few years for most teachers to reach the *master* level in most areas of their practice, although teachers should be operating at the *integrated* level if they are using the Bridges curriculum fully and making an earnest attempt to adopt its pedagogical approach. The Getting Started Guides, Implementation Meetings, and conversations with you will help them progress to this level over the course of their first year teaching the curriculum.

When you conduct a formal observation, you can use the Observation Form (AT 4.1 and 4.2) to make notes, including specific examples of learning and teaching related to the area of focus identified in the preliminary conversation with the teacher. This form is based on the rubric and will help focus both your observation and the conference with the teacher afterwards. Review the form, and the filled-in sample (AT 5.1 and 5.2), before you begin visiting classrooms.

Conducting Formal Classroom Observations & Follow-Up Conversations

We recommend beginning formal observations, each of which should take about 20 to 30 minutes, in January. Use the month of January to get used to the process by doing observations and follow-up conferences with a few select teachers, perhaps those with whom you already have a stable and open professional relationship. Then try to do an observation and follow-up conference once a month with every teacher. (See the Yearlong Schedule for specific recommendations.)

Bring the Observation Form when you conduct the observation. Be sure to make notes related to the area of focus for the observation. If possible, also record data in other blocks for future reference.

As soon as possible after the observation, have a 15- to 20-minute follow-up conference with the teacher. Focus on the observations you recorded on the Observation Form, with an emphasis on the area of focus defined ahead of time

with the teacher. You can also use the Conversation Starters (AT 6.1 and 6.2) to prompt meaningful discussions of specific topics as you see fit.

Approach these conferences with a collaborative and supportive manner, and take care to express your faith in the strengths and capabilities of each teacher. You might follow the steps below to structure these conferences:

1. First, invite the teacher to reflect upon the area of focus. You might ask if anything happened during the observation that provoked new questions or insights related to the area of focus.
2. Share some of the data from your Observation Form. Avoid making evaluative statements: simply share with the teacher what you saw in his or her classroom. Be sure to mention something positive that you noticed during the observation.
3. Ask the teacher to share some reflections about the data, including some ideas about how to improve upon the area of focus. (You might use the Conversation Starters to elicit richer responses from the teacher.)
4. Invite the teacher to set a specific goal related to the area of focus.

Administrator Tools

AT 1.1

Yearlong Schedule, page 1 of 2

	August	September	October	November	December
Implementation Meetings (1 or 2 hrs. per meeting)	<p>Establish dates for: 1) Implementation Launch Meeting sometime in September</p> <p>2) All Teacher-Led Implementation Meetings, to be conducted twice a month starting in September (if your school is using these meetings)</p>	<p>Early to mid-Sept Conduct Implementation Launch Meeting</p> <p>Mid- to late-Sept * TLIM 1-hour Number Corner meeting for each grade level</p> <p>TLIM 1-hour Unit meeting for each grade level (except Grade 1)</p> <p>..... <i>or</i></p> <p>* FLIM 2-hour meeting for each grade level</p>	<p>TLIM 1-hour Number Corner meeting for each grade level</p> <p>TLIM 1-hour Unit meeting for each grade level</p> <p>..... <i>or</i></p> <p>FLIM 2-hour meeting for each grade level</p>	<p>TLIM 1-hour Number Corner meeting for each grade level</p> <p>TLIM 1-hour Unit meeting for each grade level (except Grade 2)</p> <p>..... <i>or</i></p> <p>FLIM 2-hour meeting for each grade level</p>	<p>No Implementation Meetings this month</p>
Walk-Throughs & Follow-Ups (3-5 mins.) (5-10 mins.)	<p>Review Guide for Walk-Throughs (GfWT)</p>	<p>Review Rubric & GfWT</p> <p>Visit each classroom at least once. Have a follow-up conversation with each teacher.</p>	<p>Review Rubric & GfWT</p> <p>Visit each classroom at least twice. Have a follow-up conversation with each teacher.</p>	<p>Review Rubric & GfWT</p> <p>Visit each classroom at least three times. Have a follow-up conversation with each teacher.</p>	<p>Review Rubric & GfWT</p> <p>Visit each classroom at least twice. Have a follow-up conversation with each teacher.</p>
Check-Ins (3-5 mins.)		<p>Check in at least once with each teacher.</p> <p><i>Ask how you can help with the implementation process.</i></p>	<p>Check in at least once with each teacher.</p> <p><i>How are they doing with materials preparation and making photocopies?</i></p>	<p>Check in at least once with each teacher.</p> <p><i>Are they finding enough time to prepare for and teach the curriculum?</i></p>	<p>Check in at least once with each teacher.</p> <p><i>Are they feeling organized and prepared at this point in the year?</i></p>

* **TLIM:** Teacher-Led Implementation Meetings

* **FLIM:** Facilitator-Led Implementation Meetings

AT 1.2

Yearlong Schedule, page 2 of 2

	January	February	March	April	May
Implementation Meetings (1 or 2 hrs. per meeting)	<p>* TLIM 1-hour Number Corner meeting for each grade level</p> <p>TLIM 1-hour Unit meeting for each grade level</p> <p>..... <i>or</i></p> <p>* FLIM 2-hour meeting for each grade level</p>	<p>TLIM 1-hour Number Corner meeting for each grade level</p> <p>TLIM 1-hour Unit meeting for each grade level</p> <p>..... <i>or</i></p> <p>FLIM 2-hour meeting for each grade level</p>	<p>TLIM 1-hour Number Corner meeting for each grade level</p> <p>TLIM 1-hour Unit meeting for each grade level (except Grade 1)</p> <p>..... <i>or</i></p> <p>FLIM 2-hour meeting for each grade level</p>	<p>TLIM 1-hour Number Corner meeting for each grade level</p> <p>TLIM 1-hour Unit meeting for each grade level</p> <p>..... <i>or</i></p> <p>FLIM 2-hour meeting for each grade level</p>	<p>No Implementation Meetings this month</p>
Walk-Throughs & Follow-Ups (3-5 mins.) (5-10 mins.)	<p>Review Rubric & GfWT</p> <p>Visit each classroom three or four times. Have a follow-up conversation with each teacher.</p>	<p>Review Rubric & GfWT</p> <p>Visit each classroom at least three times. Have a follow-up conversation with each teacher.</p>	<p>Review Rubric & GfWT</p> <p>Visit each classroom three or four times. Have a follow-up conversation with each teacher.</p>	<p>TESTING MONTH No walk-throughs</p>	<p>Review Rubric & GfWT</p> <p>Visit each classroom three or four times. Have a follow-up conversation with each teacher.</p>
Observations (20-30 mins.) & Conferences (15-20 mins.)	<p>Review Rubric & Eight-Block Observation Form</p> <p>Do a formal observation and follow-up conference with several teachers.</p>	<p>Review Rubric & Eight-Block Observation Form</p> <p>Do a formal observation and follow-up conference with each teacher.</p>	<p>Review Rubric & Eight-Block Observation Form</p> <p>Do a formal observation and follow-up conference with each teacher.</p>	<p>TESTING MONTH No observations</p>	<p>Review Rubric & Eight-Block Observation Form</p> <p>Do a formal observation and follow-up conference with each teacher.</p>

* **TLIM:** Teacher-Led Implementation Meetings

* **FLIM:** Facilitator-Led Implementation Meetings

AT 2.1

Guide for Walk-Throughs, page 1 of 2

Use one copy of this form to make notes for an entire month's worth of walk-throughs in a single classroom. To see progress over time, use a different color pen to make notes after each walk-through. You might also find it helpful to write the date beside each observation.

Teacher _____ Dates _____, _____, _____, _____

<p>Use of Materials</p> <p>There is clear evidence that the teacher is using the curriculum materials in their entirety. For example:</p> <p>___ All Number Corner components (Calendar Grid, etc.) are displayed and in use.</p> <p>___ Bridges printed materials are clearly in use.</p> <p>___ Manipulatives are readily available to students.</p>	
<p>Manipulatives & Models</p> <p>Students have easy access to manipulatives and seem comfortable using them.</p> <p>Students use the manipulatives to explore ideas and relationships, and to develop understandings.</p> <p>Students' work with manipulatives is a foundation for using numbers and other forms of symbolic representation to show their thinking and solve problems.</p>	
<p>Student Discourse</p> <p>Students are doing most of the talking with one another.</p> <p>All students are given a chance to talk (e.g., by sharing ideas in pairs periodically during whole-group activities).</p> <p>Students discuss the appropriate topic many times throughout the period (in pairs, small groups, and/or as a whole class).</p>	

AT 2.2

Guide for Walk-Throughs, page 2 of 2

<p>Community</p> <p>The students and teacher function well as a community of learners.</p> <p>Students are on-task and support one another.</p> <p>Students are comfortable sharing their ideas and questions with the group.</p> <p>The teacher and students seem to enjoy and take pride in what they are doing.</p>	
<p>Teacher Questioning</p> <p>The teacher demonstrates interest in student thinking by asking students to clarify their responses.</p> <p>The teacher uses higher-order questions to challenge students and help them refine their reasoning, rather than emphasizing quick answers.</p> <p>The teacher invites students to question each other in a respectful way.</p>	
<p>Student Responsibility</p> <p>The teacher rarely answers questions about whether an answer is correct. Instead, the teacher promotes student authority by asking students to justify their thinking and verify whether their answers are correct.</p> <p>When students ask questions, the teacher often invites the rest of the class to wrestle with those questions and find ways to resolve them.</p> <p>The teacher finds other ways to promote students' responsibility for their own learning.</p>	

Use this space to make note of any changes you observed in the course of this month.

AT 3.1 Teacher Capacity Rubric, page 1 of 7

Use of Visual Models/Manipulatives				
Routine	Refined	Integrated	Master	Questions
<p>In a high-functioning Bridges classroom, the teacher ensures that students have ready access to a variety of models and manipulatives. Students are comfortable using the models and manipulatives to investigate mathematical concepts. Informed by a strong understanding of the mathematics and students' mathematical development, the teacher helps students move from manipulatives to representations, and from representations to symbolic notation when the time is right.</p>				
<p>The teacher's practice is not consistent with the pedagogical approach of the curriculum.</p> <ul style="list-style-type: none"> • Teacher uses models and manipulatives to explain mathematical procedures to students. • Student access to / use of models and manipulatives is limited. • Students do not demonstrate an understanding that the models are beneficial to mathematical learning and understanding. 	<p>The teacher utilizes elements of the curriculum's pedagogical approach in his or her practice.</p> <ul style="list-style-type: none"> • Teacher and students use models and manipulatives to perform rote mathematical procedures. • Teacher uses models and manipulatives initially but moves quickly to symbolic notation. • Teacher demonstrates a limited understanding of the power of the visual model and its connections to other mathematics. 	<p>The teacher consistently employs all elements of the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> • Students use a variety of models and manipulatives to support their communication and reasoning. • Students make connections from manipulatives to representations, and from representations to symbolic notation. • Teacher demonstrates confidence in and value of the manipulatives by encouraging students to use them. 	<p>The teacher skillfully and seamlessly applies the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> • Students select the visual models and manipulatives that will help them develop and evaluate mathematical arguments and proofs. • Students value and use manipulatives as mathematical tools. • Students move easily between models, representations, and symbolic notation. • Students create theories and generalizations based on their experiences with models. 	<p>Use these questions to help initiate conversation with the teacher after the observation.</p> <ul style="list-style-type: none"> • <i>How do visual models enhance student learning in your classroom?</i> • <i>What evidence do you have that the models used in this lesson had an impact on students?</i>

* **Note** All criteria in the Integrated level that lack a Master-level counterpart should be assumed to be part of the Master level as well.

AT 3.2 Teacher Capacity Rubric, page 2 of 7

Community of Learning			
Routine	Refined	Integrated	Master
<p>In a high-functioning Bridges classroom, students listen respectfully to one another and engage in discussions about mathematical ideas, with the teacher functioning primarily as a facilitator. Student work is displayed with comments and observations from peers.</p>			
<p>The teacher's practice is not consistent with the pedagogical approach of the curriculum.</p> <ul style="list-style-type: none"> • Students share their thinking reluctantly and timidly. • Students share their thinking almost exclusively with the teacher, rarely with each other. • Teacher acts as the sole authority in determining whether answers are right or wrong. 	<p>The teacher utilizes elements of the curriculum's pedagogical approach in his or her practice.</p> <ul style="list-style-type: none"> • Teacher invites students to pursue one line of thought or one way to solve a problem. • Students talk with each other but stray off topic. • Students share their thinking publicly to the teacher when called on. • The teacher responds differently to right and wrong answers. • Students vie with each other for dominance. • The teacher tells students when they are wrong and tells them the right answer. 	<p>The teacher consistently employs all elements of the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> • Students' work is displayed. • Teacher and students demonstrate an interest in and respect for all students' contributions. • Teacher provides non-judgmental feedback and uses the same responses to right and wrong answers. • Most students seem comfortable sharing their thinking and asking questions of each other. • Students collaborate with each other as requested by the teacher. • More often than not, the teacher defers to students to determine whether answers are right or wrong. 	<p>The teacher skillfully and seamlessly applies the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> • Students' work is displayed with a variety of comments and observations from peers. • Students take risks by freely sharing their conjectures, questions, and confusion with their peers and the teacher. • Teacher and students use wrong answers to promote further learning. • Students decide when and how to collaborate with each other and do so productively. • Teacher almost always asks students to determine whether ideas are correct or not.
			<p>Use these questions to help initiate conversation with the teacher after the observation.</p> <ul style="list-style-type: none"> • <i>What structures do you have in place to create and sustain a community of learners?</i> • <i>How did you actively maintain your established norms of interaction for discourse during this lesson?</i> • <i>How do you handle wrong answers? Can you give an example?</i> • <i>How do you promote risk taking in your classroom? Can you give an example?</i> • <i>In what ways did students show respect for each other's ideas?</i> • <i>What evidence was there that students were attentive to each other's ideas?</i>

* **Note** All criteria in the Integrated level that lack a Master-level counterpart should be assumed to be part of the Master level as well.

AT 3.3 Teacher Capacity Rubric, page 3 of 7

Student Engagement			
Routine	Refined	Integrated	Master
<p>In a high-functioning Bridges classroom, all students are fully engaged in the problem or task at hand. They interact with each other, represent their thinking in various ways, and describe their thinking. The teacher ensures that students have the opportunity to work alone, in pairs, with small groups, and as a whole class.</p>			
<p>The teacher's practice is not consistent with the pedagogical approach of the curriculum.</p> <ul style="list-style-type: none"> • A few students are giving answers, while other students are detached. • Students apply the teacher's strategy to solve problems. • Teacher does most of the talking and prescribes ways of solving problems and thinking about the topic at hand. • Students demonstrate a passive disposition towards mathematics. • Students resist engaging with the materials. • Students seem to be struggling with unresolved misunderstandings about the concepts or skills. 	<p>The teacher utilizes elements of the curriculum's pedagogical approach in his or her practice.</p> <ul style="list-style-type: none"> • Students talk to other students about mathematics when directed to do so by the teacher. • Teacher allows exploration of several strategies to solve problems but ultimately communicates a preferred method. • Students show an interest in math. • Students make sense of the mathematical concepts but are not connecting their understandings to computational skills. 	<p>The teacher consistently employs all elements of the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> • Students talk to other students about mathematics and solve problems with minimal guidance from the teacher. • Teacher finds ways to help all students share their strategies with partners or the class. • Students apply a variety of strategies to solve problems. • Students express a positive view of math. • Students make sense of the mathematics and display computational growth aligned with state standards. 	<p>The teacher skillfully and seamlessly applies the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> • Students pay attention to everyone's contributions. • When students become confused or make mistakes, they re-think their solutions and strategies on their own or with support from peers. • Students talk excitedly and passionately about mathematics and argue with each other in a respectful way. • Students express confidence in their own conclusions about mathematical accuracy. • Students make sense of the mathematics and display computational growth aligned with state standards.
			<p>Use these questions to help initiate conversation with the teacher after the observation.</p> <ul style="list-style-type: none"> • <i>How did students learn from each other during this lesson?</i> • <i>How do you think students view math? What is your evidence?</i> • <i>How could you tell that students were actively engaged in this lesson?</i>

*** Note** All criteria in the Integrated level that lack a Master-level counterpart should be assumed to be part of the Master level as well.

AT 3.4 Teacher Capacity Rubric, page 4 of 7

Monitoring Student Learning			
Routine	Refined	Integrated	Master
<p>In a high-functioning Bridges classroom, the teacher is aware of grade-level benchmarks, actively listens for misconceptions and mastery, and provides appropriate challenge and support.</p>			
<p>The teacher's practice is not consistent with the pedagogical approach of the curriculum.</p> <ul style="list-style-type: none"> The teacher does not adjust instruction to adapt to students' responses or actions. The teacher corrects students' mistakes instead of finding ways to help students strengthen their understandings by correcting their own mistakes. Teacher attributes students' difficulties to the students' shortcomings or to those of the curriculum. Teacher refers to the grade-level benchmark or standard for the activity with students. 	<p>The teacher utilizes elements of the curriculum's pedagogical approach in his or her practice.</p> <ul style="list-style-type: none"> The teacher uses the Teachers Guides to provide additional support or challenge for students. Teacher asks questions to assess students' understanding, but does not seem comfortable addressing students' misunderstandings on the spot. The teacher deals with misconceptions by telling students how to get the correct answer or tells them the correct answer. Teacher refers to grade-level benchmarks or presses students toward achievement of them. 	<p>The teacher consistently employs all elements of the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> Teacher asks questions to learn more about students' misconceptions and adjusts instruction as necessary. Teacher differentiates instruction by grouping students differently, adjusting the curriculum, and providing challenges and support as needed. Teacher gives students specific, useful feedback without leading them to a single way of thinking or to a single answer. Teacher assesses students' progress in relation to grade-level benchmarks. 	<p>The teacher skillfully and seamlessly applies the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> Teacher orchestrates student discussions to create a progression toward more sophisticated or efficient strategies. Teacher poses challenges, contradictions to student conclusions, and more complex problems to extend their thinking. Teacher sets aside some student comments and pursues others in order to help students develop strong understandings. Teacher demonstrates a clear understanding of how the lesson content is connected to grade-level benchmarks.
		<p>Use these questions to help initiate conversation with the teacher after the observation.</p> <ul style="list-style-type: none"> How do you press students to provide meaningful explanations? How do you differentiate instruction to meet individual needs? Can you give an example? How does this lesson align with our district expectations/standards? How do children's ideas develop over time in this topic? In what ways did you help students extend or deepen their thinking? How did you probe the fragility of student thinking? 	

* **Note** All criteria in the Integrated level that lack a Master-level counterpart should be assumed to be part of the Master level as well.

AT 3.5 Teacher Capacity Rubric, page 5 of 7

Questioning				
Routine	Refined	Integrated	Master	Questions
<p>In a high-functioning Bridges classroom, the teacher asks a variety of questions including those with one correct response (e.g., What is the name of this shape?), as well as higher order questions that begin with <i>how</i>, <i>why</i>, and <i>what happens if...</i> The teacher uses questions that challenge students' reasoning and conclusions in order to strengthen their understandings.</p>				
<p>The teacher's practice is not consistent with the pedagogical approach of the curriculum.</p> <ul style="list-style-type: none"> • Teacher waits only 1 or 2 seconds for an answer after posing a question and sometimes answers his or her own question. • Teacher recognizes one way of solving a problem and does not demonstrate interest in students' unique strategies or ways of thinking. • Teacher focuses on correct answers, not conceptual understanding. • Teacher relies on the Teachers Guide for pacing. • Teacher leads students' thinking along predetermined lines. • Teacher demonstrates an understanding of the mathematics in the lesson. 	<p>The teacher utilizes elements of the curriculum's pedagogical approach in his or her practice.</p> <ul style="list-style-type: none"> • Teacher poses higher-order questions to only some students. • Teacher waits 3 to 5 seconds for an answer after posing a question. • Teacher solicits a variety of strategies and ways of thinking, but clearly values some responses more highly than others. 	<p>The teacher consistently employs all elements of the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> • Teacher asks a variety of questions and invites students to share observations frequently. • Teacher waits a long time after posing a question to provide all students the chance to come up with and share a response. • Teacher asks students to share a variety of ways to solve a problem and alternative ways of thinking about a problem. • Teacher asks students to explain and justify their thinking. 	<p>The teacher skillfully and seamlessly applies the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> • Teacher and students pose a variety of questions to the whole group. • Teacher asks questions that challenge students' thinking, strengthen their understanding, and keep the discourse rigorous. • Teachers' questions reveal a genuine interest in all students' thinking. • Teacher uses two wait times: one after asking a question and another after a student responds. • Teacher demonstrates an understanding of how the mathematics in the lesson relates to more advanced mathematical concepts, for example, by finding ways to extend students' mathematical thinking. 	<p>Use these questions to help initiate conversation with the teacher after the observation.</p> <ul style="list-style-type: none"> • <i>What questions did you ask in order to elicit student thinking?</i> • <i>What questions did you ask to provoke students to think more deeply?</i> • <i>How did you use a wrong answer as a learning opportunity?</i> • <i>In what ways did the wait time you provided after asking a question impact student learning?</i>

*** Note** All criteria in the Integrated level that lack a Master-level counterpart should be assumed to be part of the Master level as well.

AT 3.6 Teacher Capacity Rubric, page 6 of 7

Communication/Discourse			
Routine		Refined	Master
Integrated		Questions	
<p>In a high-functioning Bridges classroom, the teacher uses think-pair-shares to engage students in discussions. The teacher models clear and precise mathematical language and poses provocative questions, but students do most of the talking.</p>			
<p>The teacher's practice is not consistent with the pedagogical approach of the curriculum.</p> <ul style="list-style-type: none"> • Teacher does nearly all of the talking. • Students rarely talk to each other. • Teacher does not seem to notice whether students are engaged or stay on task. • Teacher calls on one student at a time to share his or her thinking, rather than promoting discussion among students. • Teacher and students use precise mathematical language infrequently. • Students seem unclear about the purpose of the lesson. 	<p>The teacher utilizes elements of the curriculum's pedagogical approach in his or her practice.</p> <ul style="list-style-type: none"> • Teacher does most of the talking. • Discourse is between teacher and students, rather than between students. • Teacher expresses a desire for students to stay on-task but permits off-task behavior anyway. • The teacher and students use precise mathematical language occasionally. • Students express a belief that they know what mathematics the lesson is addressing. 	<p>The teacher consistently employs all elements of the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> • Teacher talks less than students do. • Teacher provides time for students to share in pairs and as a whole group. • Teacher and students use clear and precise mathematical language. • Students adapt their strategies and conclusions based on ideas shared by their peers. • Teacher sets a clear learning target for students at the beginning of the lesson. 	<p>The teacher skillfully and seamlessly applies the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> • Students do most of the talking. • Teacher uses think-pair-share to ensure that all students get to discuss their ideas and to engage all students in class discussions. • Teacher facilitates whole-group discussions in ways that keep all students engaged and help all students strengthen their understandings. • Students are able to identify the learning target of the day.
			<ul style="list-style-type: none"> • <i>What was the result of using think-pair-share?</i> • <i>How do you decide which student will share?</i> • <i>How do you encourage student-to-student discourse?</i>

*** Note** All criteria in the Integrated level that lack a Master-level counterpart should be assumed to be part of the Master level as well.

AT 3.7 Teacher Capacity Rubric, page 7 of 7

Organization & Management			
Routine	Refined	Integrated	Master
<p>In a high-functioning Bridges classroom, the teacher and students use well-established routines that help them make efficient transitions. The classroom and materials are organized to facilitate learning and student autonomy.</p>			
<p>The teacher's practice is not consistent with the pedagogical approach of the curriculum.</p> <ul style="list-style-type: none"> Teacher and students take a long time transitioning from one activity to another or from one place to another and don't appear to have effective routines in place for such transitions. Teacher and students seem to have trouble finding the materials (e.g., manipulatives, overheads, student books, etc.) they need during the lesson. Number Corner components, such as the Calendar Grid, are not up to date. Teacher appears to use the Teachers Guide as a script. 	<p>The teacher utilizes elements of the curriculum's pedagogical approach in his or her practice.</p> <ul style="list-style-type: none"> Teacher and students follow routines, but students need to be reminded what to do. Teacher has arranged the classroom so that students can work in pairs and as a whole group. Manipulatives and other materials, including Work Places and Student Books, are organized. Number Corner components are updated. Lesson is far shorter or longer than designed (about 20 mins. for Number Corner and 1 hour for a Bridges session). Teacher uses the Teachers Guide as a reference but refers to it frequently. 	<p>The teacher consistently employs all elements of the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> Teacher and students use routines that help them make efficient transitions. Teacher has arranged the classroom so that students can work alone, in pairs, in small groups, and as a whole class. Manipulatives and other materials, including Work Places and Student Books, are well organized and easy to access. Teacher adheres to the pacing and lesson timing in the Teachers Guide. Teacher uses the Teachers Guide as a reference, not a script, and refers to it only occasionally. 	<p>The teacher skillfully and seamlessly applies the curriculum's pedagogical approach.</p> <ul style="list-style-type: none"> Teacher and students use well-established routines that promote student autonomy. The classroom setup and routines allow the teacher to work one-on-one and with small groups of students as needed, while the rest of the class remains highly engaged. Students don't lose time retrieving materials and have regular opportunities to choose which materials they want to use. Teacher uses the Teachers Guide sparingly and only as a reference.
			<p>Use these questions to help initiate conversation with the teacher after the observation.</p> <ul style="list-style-type: none"> What routines do you and the students follow to make smooth, efficient transitions? (e.g., routines for starting Number Corner, for going to Work Places, for retrieving manipulatives when needed) How and when do you encourage students to choose their own manipulatives? What kinds of notes do you make in your Teachers Guides?

*** Note** All criteria in the Integrated level that lack a Master-level counterpart should be assumed to be part of the Master level as well.

AT 4.1

Observation Form, page 1 of 2

You can use a single copy of this form to make notes for multiple observations of a single teacher. If you do, use a different color pen to make notes for each observation. You might also find it helpful to write the date beside each note.

Teacher _____

Date _____ Area of focus _____

Date _____ Area of focus _____

Date _____ Area of focus _____

Date _____ Area of focus _____

<p>Organization & Management Teacher and students use well-established routines to make efficient transitions.</p> <p>The classroom and materials are organized to facilitate learning, allow for flexibility, and promote student autonomy.</p>	<p>Use of Visual Models & Manipulatives Teacher encourages students to use manipulatives during investigations.</p> <p>Students use models and manipulatives with care and purpose to support their communication and to investigate mathematics.</p>
<p>Student Engagement Students are fully engaged in the problem or task at hand and participate with enthusiasm and respect for others.</p> <p>Students lead discourse and questioning.</p>	<p>Community of Learning Students' work is displayed with comments and observations from peers.</p> <p>Students listen respectfully to one another and engage in discussions about mathematical ideas, with the teacher functioning primarily as a facilitator.</p>

AT 4.2

Observation Form, page 2 of 2

<p>Communication / Discourse Teacher uses think-pair-shares to engage students in discussions.</p> <p>Teacher models clear and precise mathematical language.</p> <p>Teacher talks less than students do.</p>	<p>Questioning Teacher asks a variety of questions including those with one correct response (e.g., What is the name of this shape?), as well as higher order questions that begin with <i>how</i>, <i>why</i>, and <i>what happens if...</i></p> <p>Teacher uses questions to challenge and extend student thinking.</p>
<p>Monitoring Student Learning Teacher actively listens for misconceptions and mastery.</p> <p>Teacher provides appropriate challenge and support.</p>	<p>Other</p>

AT 5.1 **Sample Observation Form, page 1 of 2**

You can use a single copy of this form to make notes for multiple observations of a single teacher. If you do, use a different color pen to make notes for each observation. You might also find it helpful to write the date beside each note.

Teacher John Smith

Date 1/16 Area of focus Communication - Use think pair share

Date 2/29 Area of focus Quest. Pose higher order questions to extend st. thnk

Date 3/23 Area of focus Comm. Get students to do more talking than teacher

Date _____ Area of focus _____

<p>Organization & Management Teacher and students use well-established routines to make efficient transitions.</p> <p>The classroom and materials are organized to facilitate learning, allow for flexibility, and promote student autonomy. Manipulatives are organized. Students know where to find them and can get them while working. (1/16)</p>	<p>Use of Visual Models & Manipulatives Teacher encourages students to use manipulatives during investigations. Some students did not use any manipulatives or sketches and jumped to using incorrect procedures with numerals. (1/16)</p> <p>Students use models and manipulatives with care and purpose to support their communication and to investigate mathematics. Most students are exploring different materials to solve problems. (2/29) Two students did not use any manipulatives but remained unsure how to proceed. (3/23)</p>
<p>Student Engagement Students are fully engaged in the problem or task at hand and participate with enthusiasm and respect for others. Students did a worksheet individually. Some students did not seem to understand what to do. (1/16)</p> <p>Students lead discourse and questioning. Student shares her work and asks the class if they have any questions. (3/23)</p>	<p>Community of Learning Students' work is displayed with comments and observations from peers. Posters around the room. Students wrote feedback to each other on sticky notes, which are on the posters. (3/23)</p> <p>Students listen respectfully to one another and engage in discussions about mathematical ideas, with the teacher functioning primarily as a facilitator. Two girls in the front giggled at one student's answer. (1/16) Mostly student-to-student talking. (3/23) Students question each other in a respectful way. (3/23)</p>

AT 5.2

Sample Observation Form, page 2 of 2

<p>Communication / Discourse Teacher uses think-pair-shares to engage students in discussions. Teacher talked back and forth with one student at a time. Several students off task. (1/16) T: "Now turn to the person next to you and talk about this strategy." (3/23)</p> <p>Teacher models clear and precise mathematical language. T: "A quotient is a mathematical term for an answer to a division problem. What is the quotient for 81 divided by 9?" (2/29)</p> <p>Teacher talks less than students do. Students discuss T's questions, talk back and forth with each other, and ask each other questions. (3/23)</p>	<p>Questioning Teacher asks a variety of questions including those with one correct response (e.g., What is the name of this shape?), as well as higher order questions that begin with <i>how</i>, <i>why</i>, and <i>what happens if...</i> T: "What do you notice about..." "How can we find..." "Why does the answer change when we..." "What happens if..." (2/29)</p> <p>Teacher uses questions to challenge and extend student thinking. Teacher question had early finishing students do another identical problem. Students finished quickly then began talking about football. (1/16) T: "Why did you choose that strategy?" "Why does it work?" "Can you think of another way to solve the problem?" (2/29)</p>
<p>Monitoring Student Learning Teacher actively listens for misconceptions and mastery. Teacher clarified student answer – did not seem to match what student said. Student embarrassed. (3/23)</p> <p>Teacher provides appropriate challenge and support. T: "If you are having a hard time with this, come meet with me here. If not, work on Work Places." (1/26)</p> <p>T gives positive feedback, describing and explaining what was done well and what was understood. Does not just say, "Good job." (2/29)</p> <p>T: "Choose two of the five problems. Choose the ones that are the right level for you." (3/23)</p>	<p>Other</p>

AT 6.1

Conversation Starters, page 1 of 2

These questions, taken from the Teacher Capacity Rubric (AT 3.1–3.7), can enhance your conversations with teachers following formal observations. Select a few questions from the appropriate categories based on the area of focus you and the teacher established before the observation.

Use of Visual Models/ Manipulatives

- How do visual models enhance student learning in your classroom?
- What evidence do you have that the models used in this lesson had an impact on students?

Community of Learning

- What structures do you have in place to create and sustain a community of learners?
- How did you actively maintain your established norms of interaction for discourse during this lesson?
- How do you handle wrong answers? Can you give an example?
- How do you promote risk taking in your classroom? Can you give an example?
- In what ways did students show respect for each other's ideas?
- What evidence was there that students were attentive to each other's ideas?

Student Engagement

- How did students learn from each other during this lesson?
- How do you think students view math? What is your evidence?
- How could you tell that students were actively engaged in this lesson?

AT 6.2

Conversation Starters, page 2 of 2**Monitoring Student Learning**

- How do you press students to provide meaningful explanations?
- How do you differentiate instruction to meet individual needs? Can you give an example?
- How does this lesson align with our district expectations/standards?
- How do children's ideas develop over time in this topic?
- In what ways did you help students extend or deepen their thinking?
- How did you learn more about what students understand and what is still confusing to them?

Questioning

- What questions did you ask in order to elicit student thinking?
- What questions did you ask to provoke students to think more deeply?
- How did you use a wrong answer as a learning opportunity?
- In what ways did the wait time you provided after asking a question impact student learning?

Communication/Discourse

- What was the result of using think-pair-share?
- How do you decide which student will share?
- How do you encourage student-to-student discourse?

Organization & Management

- What routines do you and the students follow to make smooth, efficient transitions? (e.g., routines for starting Number Corner, for going to Work Places, for retrieving manipulatives when needed)
- How and when do you encourage students to choose their own manipulatives?
- What kinds of notes do you make in your Teachers Guides?

AT 7.1 Recommended Reading for Administrators

- Boaler, Jo. *What's Math Got to Do with It? Helping Children Learn to Love Their Least Favorite Subject—And Why It's Important for America*. New York: Viking Penguin Group, 2008.
- Danielson, Charlotte. *Enhancing Student Achievement: A Framework for School Improvement*. Alexandria, VA: ASCD, 2002.
- Guskey, Thomas R. *Evaluating Professional Development*. Thousand Oaks, CA: Corwin Press, 1999.
- National Council of Teachers of Mathematics. *Principles and Standards of School Mathematics 2000*. Reston, VA: National Council of Teachers of Mathematics, 2000.
- National Research Council. *Adding It Up: Helping Children Learn Mathematics*. Washington, D.C.: National Academies Press, 2001.
- Reeves, Douglas B. *Leading Change in Your School: How to Conquer Myths, Build Commitment, and Get Results*. Alexandria, VA: ASCD, 2009.
- Shulman, Lee S. *The Wisdom of Practice: Essays on Teaching, Learning, and Learning to Teach*. San Francisco: Jossey-Bass, 2004.
- Smith, Margaret Schwan. *Practice-Based Professional Development for Teachers of Mathematics*. Reston, VA: National Council of Teachers of Mathematics, 2001.
- Stigler, James and James Hiebert. *The Teaching Gap: Best Ideas from the World's Teachers for Improving Education in the Classroom*. New York: Free Press, 1999.
- Truax, Mary P. and Thomas C. DeFranco. "Mapping Mathematics Classroom Discourse and Its Implications for Models of Teaching." *Journal for Research in Mathematics Education* 39, no. 5 (2008): 489–525.