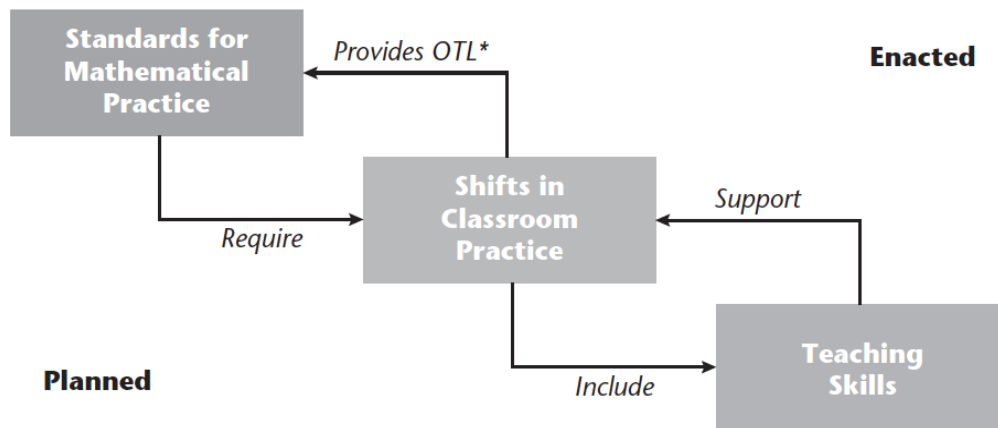


# Coaching Tips and Tools: Leading for Mathematical Proficiency

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## Leading for Mathematical Proficiency (LMP) Framework



\*OTL = Opportunities to learn

Tips for Posing Questions	Question Characteristics	NOTES
	Plural Forms	
	Tentative Language	
	Open Ended	
	Positive Presuppositions	
	Higher-Order Thinking	
	Approachable Voice	

Bay-Williams, J. M., McGatha, M. B., Kobett, B., & Wray, J. (2014). *Mathematics Coaching: Resources and Tools for Coaches and Leaders, K-12*. New York, NY: Pearson. (See also McGatha, M. B., and Bay-Williams, J. M. (2013). Making shifts toward proficiency. *Teaching Children Mathematics*, 20 (3), 162-170.)

## Coaching Tool 13.2: Supporting the Beginning Teacher

Teacher Phase	My Plans for Support
Anticipation	
Survival	
Disillusionment	
Rejuvenation	
Reflection	
Anticipation	

Source: Based on Moir, Ellen. The phases of a first-year teacher's attitude toward teaching. All rights reserved. New Teacher Center. [www.newteachercenter.org](http://www.newteachercenter.org). [www.newteachercenter.org/blog](http://www.newteachercenter.org/blog).

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# *Shifts in Classroom Practice*

## **Shift 1: From *same instruction* toward *differentiated instruction*.**

Same instruction for all students. → Differentiated instruction, but same learning outcomes for all students.

## **Shift 2: From *students working individually* toward *community of learners*.**

Students work individually on tasks and seek feedback from teacher on reasonableness of strategies and solutions. → Community of learners as a part of which students hear, share, and judge reasonableness of strategies and solutions.

## **Shift 3: From *mathematical authority coming from the teacher or textbook* toward *mathematical authority coming from sound student reasoning*.**

Correctness of solution is determined by seeking input from teacher or textbook. → Correctness of solution is based on reasoning about the accuracy of the solution strategy.

## **Shift 4: From *teacher demonstrating “how to”* toward *teacher communicating “expectations” for learning*.**

Teacher demonstrates the way to solve a problem and helps students solve the problem that way. → Teacher facilitates high-level performance by sharing learning goals and expectations for products that demonstrate learning.

## **Shift 5: From *content taught in isolation* toward *content connected to prior knowledge*.**

Content presented independent of its connections to what has been previously learned. → Content presented in ways that give explicit attention to making connections among mathematical ideas.

## **Shift 6: From *focus on correct answer* toward *focus on explanation and understanding*.**

Discussions and classroom routines focus on student explanation of solutions and whether they are correct. → Discussions and classroom routines focus on student explanations addressing why an answer is (or isn't) correct.

## **Shift 7: From *mathematics-made-easy for students* toward *engaging students in productive struggle*.**

Mathematics is presented in small chunks, with help provided, so that students reach solutions quickly and without higher-level thinking. → Teacher poses tasks and challenges students to persevere and attempt multiple approaches to solving problems.

## Planning Tool 6.3: Collecting Anecdotal Evidence



Many teachers circulate through the classroom while students work to monitor their progress. Collecting anecdotal evidence this way can be valuable formative assessment data. However, many teachers don't actually collect any physical data, but instead rely on memory. This form and questions can support teachers in thinking about useful ways to collect anecdotal evidence.

**Learning Target:**

**Brief Description of Instructional Activity:**

**How will you collect data about student learning during the lesson? (check one)**

Anecdotal Notes    Checklist    Rubric    Other \_\_\_\_\_

**Will you collect data on  the whole class or  a subset of students? If a subset of students, list names if appropriate:**

**Description/Drawing of Instrument:**

## Data Gathering Tool 6.6: Collecting Anecdotal Evidence

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Use this tool to collect observational data when the teacher is using the tool created in Planning Tool 6.3, Collecting Anecdotal Evidence. Only record data (what you see or hear) and not judgments.

Type of Tool \_\_\_\_\_

Date \_\_\_\_\_

What did you notice about the way the teacher used the tool?

What did you notice about students' reactions to their teacher's use of the tool?

What other things did you notice that could have been a result of the teacher's use of the tool?

## Reflection Tool 6.10: Collecting Anecdotal Evidence

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This reflection tool can be used as a follow-up to Planning Tool 6.3 and Data Gathering Tool 6.6, Collecting Anecdotal Evidence.

### **Questions about the tool used by the teacher described in the Collecting Anecdotal Evidence planning tool:**

1. In what ways did the tool you created help you collect evidence of student learning?
2. What are some things you learned about students from using the tool?
3. What features of the tool were most useful?
4. To what extent did students learn what you intended?
5. How might the data you collected affect your next steps for instruction?

### **Questions about the observation data gathered by the coach in the Collecting Anecdotal Evidence data gathering tool:**

6. What do you notice about the data I collected for you?
7. What surprises you about the data I collected for you? Why?
8. How might this data affect your next steps in using this tool?