

# Solution Tree | Press

## **Common Core Mathematics in a PLC at Work™, Leader's Guide**

*By Timothy D. Kanold (Series Editor and Author) and Matthew R. Larson*

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### **Study Guide**

This study guide is a companion to the book *Common Core Mathematics in a PLC at Work™, Leader's Guide* by Timothy D. Kanold (series editor and author) and Matthew R. Larson.

*Common Core Mathematics in a PLC at Work™, Leader's Guide* gives school leaders the tools to effectively improve teachers' mathematics instruction and address the Common Core State Standards (CCSS) for mathematics challenge: *All students successfully learning rigorous standards for college or career-preparatory mathematics.*

This guide is arranged by chapter, enabling readers to either work their way through the entire book or to focus on the specific topics addressed in a particular chapter. It is best used with collaborative teacher teams, but can also be used by individuals and small groups, to identify key points, raise questions for consideration, assess conditions in a particular school or district, and suggest steps that might be taken to implement the CCSS in a PLC culture.

We thank you for your interest in this book, and we hope this guide is a useful tool in your efforts to create a healthy culture in your school or district.

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## **Chapter 1**

### **Leading High-Performing Collaborative Teams for Mathematics**

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1. Read the descriptors of the seven stages of teacher collaboration in table 1.1 (page 12). At what stage do you believe your teams are currently operating? Why? How can you make further progress toward authentic teacher collaboration?
2. How do you ensure your collaborative teams have the collaborative time necessary to work effectively on unit-by-unit mathematics instruction and assessment? If this is problematic, how might you restructure your weekly professional development time within your school calendar?
3. Every effective collaborative team “knows who is driving the bus” of the team meeting. Have you identified team leaders for every collaborative team? How do your team leaders help to facilitate the work of the team? What else could your team leaders do to support the groups’ work?
4. You should frequently examine the team meeting agendas and minutes for each team in your leadership sphere. Are the meetings efficient? Are they effective? Are they a good use of teacher time? What are ways you can support and monitor the improved quality of team norms, behaviors, and the overall team meeting experience?

5. Figure 1.5 (page 21) suggests ten high-leverage mathematics practices and actions for collaborative teams. Use this diagnostic tool to help focus the needed work of your collaborative teams. You can ask each team to select two of the practices that they don't believe are currently and consistently present in their instruction or assessment. What actions can you and your teams take (perhaps as part of a SMART goal) to focus on implementation of these practices?

## **Chapter 2**

### **Leading the Implementation of the Common Core Standards for Mathematical Practice**

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1. You can help your collaborative teams better understand the Mathematical Practices by asking them to select one of the eight Standards for Mathematical Practice and facilitating discussion on this practice. What are three student behaviors that would illustrate a student engagement in this practice? What teacher actions are necessary to foster these behaviors?
2. Guide your teams in examining teacher actions that help to develop Mathematical Practice 3. To what extent are classrooms in your school or district currently demonstrating the social norms required to effectively engage students in Mathematical Practice 3, as described on pages 37–39? Ask your teams to share examples and nonexamples. What action steps will you take to lead your teams in creating the necessary environment?
3. Help your collaborative teams to examine the perseverance aspect of Mathematical Practice 1. To what degree do your teams support students with the notion of *productive struggle*? How can teachers promote productive struggle and still encourage students’

continued engagement with various mathematical tasks? What specific action steps can you and your teams take to develop student perseverance over time in the classroom?

4. Consider the reflecting question on homework in table 2.1 (page 49) and the section on Design Element Four: Homework (pages 52–53). How will your teams provide unit-by-unit homework assignments to be used by all students of their respective courses? See chapter 2's Online Resources section (pages 58–59) for sample assignment sheets.
5. Ask your collaborative teams to use the CCSS Mathematical Practices lesson-planning tool (figure 2.12, page 53) to design a lesson focused on engaging students in one of the Standards for Mathematical Practice. What criteria will you look for when you observe team members implementing the lesson? How can you lead teams in reflection and revision to make the lesson more effective?

## **Chapter 3**

### **Leading the Implementation of the Common Core Mathematics Content**

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1. What do you believe will be some of the biggest content challenges your collaborative teams face as a result of the Common Core content standards?
2. Ask your collaborative teams to select a content standard cluster from one of the CCSS domains, and then facilitate team discussion. For example, how can team members engage students in particular Standards for Mathematical Practice as they learn about the standards in the chosen content standard cluster?
3. Do you believe your collaborative teams are *seeking adequate time to teach the CCSS content*? Consider the calendars in figures 3.1 and 3.2 on pp. 70–71. For an upcoming unit of study, help teams design a similar calendar, providing adequate time to launch an investigation into the unit and opportunities for formative feedback and review. Be sure to stress the importance of assigning the exact Common Core content standards that will be covered (no more than four or five) and the Mathematical Practices that will receive extra focus and emphasis.
4. Chapter 3 provides four collaborative strategies to help you fully implement the Common Core content standards (see pages 75–83). Ask your collaborative teams to select one of the collaborative strategies as a focus for their grade level or course. How can you ensure

this critical strategy receives the required instructional emphasis needed? Keep in mind that you may need to monitor and review teams' unit-by-unit planning and pacing documents from time to time. What adjustments can teams make for improvement?

5. Ask your collaborative teams to examine tables 3.6 or 3.7 (pages 80–81) and apply the questions to a content standard unit they are currently teaching or are about to teach. How can you guide your teams in implementation of the Common Core content standards?

## Chapter 4

### Leading the Implementation of the Teaching-Assessing-Learning Cycle

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1. How do your teams collaboratively design and score unit-by-unit assessments and ensure the use of high-quality assessments and the consistent scoring of those assessments? Why is agreement in this practice so critical? Are you aware of the actual assessment instruments used in your school or district, and are they of high quality based on best practice? How do you know?
2. How do you currently evaluate the quality of any assessment tool used by your teams? (See figure 4.4, page 94.) What action steps do you need to take in order to help your teams collaboratively develop critical and necessary *before and during the unit* assessment practices? (See step one of the teaching-assessing-learning cycle in figure 4.2, page 90.)
3. For each collaborative team, do all of the current assessment instruments (tests and quizzes) primarily serve a formative function (rather than a merely diagnostic function)? If not, what action steps will you take to lead your teams in changing current assessment practices?



4. How do your collaborative teams provide feedback to students after they complete an assessment? Does each member of the collaborative team provide all students accurate, fair, specific, and timely feedback? How do you know? What action steps will you take to ensure feedback in your school or district meets these criteria?
  
5. Do all of your teams provide students multiple opportunities to demonstrate their knowledge? That is, do students have the opportunity to be reassessed and improve their grade before the end of the grading period? If not, what actions steps will you take to ensure all members of the collaborative team uphold this research-affirmed practice? How can you make this an efficient process for teachers and a motivational assessment process for your students?
  
6. Lead your collaborative teams in a discussion on the quality of current grading practices. For example, do team members use mean scores or allow the use of zeros? Do they allow make up work and extra credit? Discuss the advantages and disadvantages of each approach. Do all members of the team use the same approach to determine students' grades? If not, what action steps will they need to take to develop the coherence, fidelity, and consistency that students deserve?

## **Chapter 5**

### **Leading the Implementation of Required Response to Intervention**

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1. What sources inform equity in mathematics education for your school or district, and how? Complete table 5.1 (page 112). What does this activity reveal about your teams' current practices?
2. Do your collaborative teams have dedicated time allocated to provide tiered intervention support for students who need it? Is this intervention required, coherent, focused, and consistent for all students in your school or district's mathematics courses? If not, how can you work with your collaborative teams to find the time in your school schedule and better address student needs?
3. Consider your current tiered intervention support for students who require it. What is the instructional focus of the intervention? Specifically, does the intervention seek to teach for depth of understanding for all students, or is it narrowly focused on computational skills? If the intervention is not balanced in its approach, what steps can you take to broaden its instructional goals?
4. What data do you use to identify students in need of targeted Tier 2 intervention? What does table 5.5 (page 125) suggest regarding high-quality data?

5. Help your collaborative teams examine the data for your students with minimal English language or literacy skills. How can teachers ensure that the unit-by-unit instruction and assessments address students with special needs?