

Strengths-Based TEACHING AND LEARNING in Mathematics



TEACHING
TURNAROUNDS
FOR GRADES K-6

Beth McCord
Kobett

Karen S.
Karp



FOREWORD BY
FRANCIS (SKIP) FENNEL

A JOINT PUBLICATION

CORWIN Mathematics



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Please enjoy this complimentary excerpt from *Strengths-Based Teaching and Learning in Mathematics*. This readers guide helps you reflect and discuss each lesson.

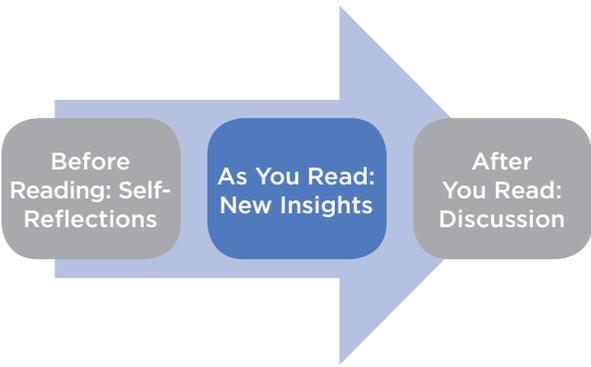
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Reader's Guide

Strengths-Based Teaching and Learning in Mathematics: Five Teaching Turnarounds for Grades K-6

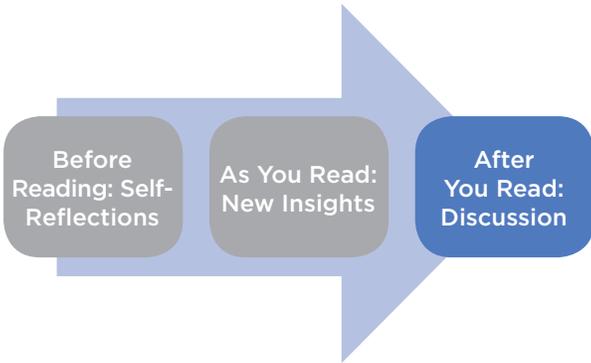
by Beth McCord Kobett and Karen S. Karp

Book Study Timeline		
WEEK	READ CHAPTER(S)	DATE FOR DISCUSSION
1	Introduction: An Invitation to Turn Around Chapter 1: Identify Your Teaching Strengths	
2	Chapter 2: Turn Around Mathematical Proficiencies, Processes, and Practices	
3	Chapter 3: Your Students' Mathematics Content Strengths	
4	Chapter 4: Turn Around Grouping Practices	
5	Chapter 5: Turn Around Tasks	
6	Chapter 6: Turn Around Feedback	
7	Chapter 7: Turn Around Students' Identities	
8	Chapter 8: Turn Around Professional Learning Communities	
9	Chapter 9: Turn Around Family Communication Epilogue: Turn Around Reflection	



As You Read: New Insights. When working with a collaborative team, it is often very helpful to be prepared in advance with notes about the reading. Use the following chart to record your notes from the Introduction and Chapter 1.

Thoughts on Introduction: An Invitation to Turn Around and Chapter 1: Identify Your Teaching Strengths					
READING NOTES	PAGE	I WONDER...	THIS CONNECTS TO...	I'D LIKE TO TRY...	I AM WORRIED ABOUT...



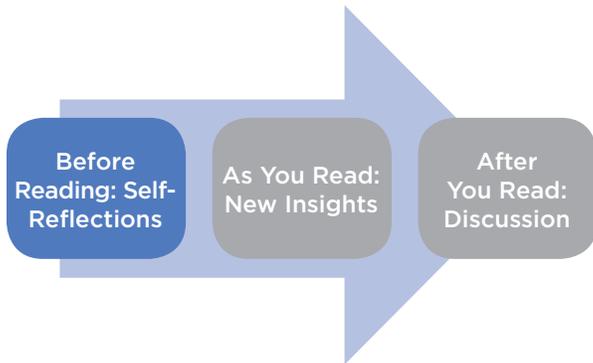
After You Read: Discussion. After you read the Introduction: An Invitation to Turn Around and Chapter 1: Identify Your Teaching Strengths, begin your group discussion session by sharing some of your thoughts about the reading. You may begin by revisiting the discussion questions introduced in the Before Reading section. You can use the headings from your notetaking. You may use the following graphic organizer to record your ideas from the group discussion regarding sharing, identifying particular Turnaround moments from the group, and then determining the next steps (Try Its!) or (Spotlights) for individuals or the group. As the group shares, each participant can record interesting thoughts, summaries, or new questions developed from the reading. The Turnarounds section is a place to record new insights, and Try Its! and Spotlights are the actionable items that the group will want to test out after reading and discussing the chapter. For this reading, we suggest that you begin with the Spotlight on Your Practice: Your Strengths activity to launch your discussion.

SHARING	TURNAROUNDS	TRY ITS!	SPOTLIGHTS



Teaching Turnaround Two: Discover and Leverage Your Students' Mathematical Strengths

Chapter 2: Turn Around Mathematical Proficiencies, Processes, and Practices

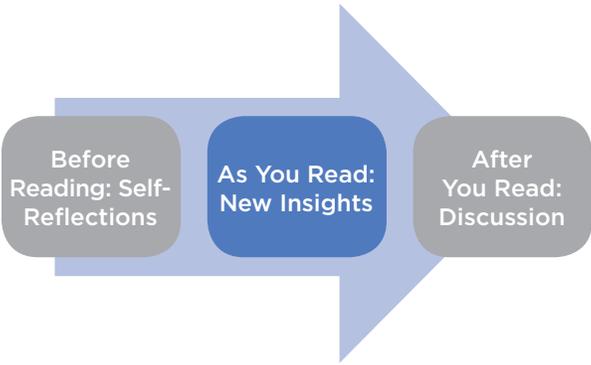


Before Reading: Self-Reflections. As you prepare to read Chapter 2: Turn Around Mathematical Proficiencies, Processes, and Practices, take a minute to jot down some of your own thoughts and ideas about the questions below. Then revisit these responses as you share and discuss.

PREREADING QUESTIONS	MY THOUGHTS AND QUESTIONS
<p>1. What kinds of mathematics proficiency strengths do students in your class exhibit? What do the students look or sound like when they are exhibiting these strengths? Consider the following proficiencies:</p> <ul style="list-style-type: none"> • Conceptual Understanding • Procedural Fluency • Strategic Competence • Adaptive Reasoning • Productive Disposition 	

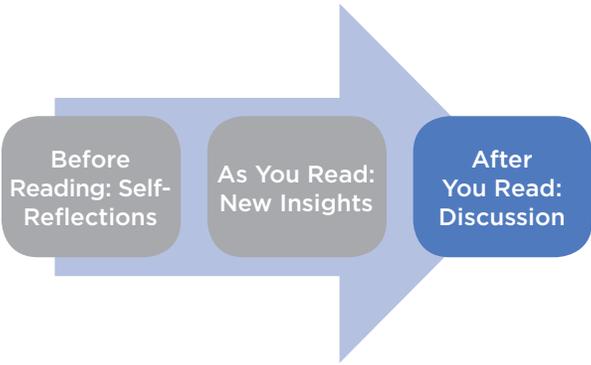
PREREADING QUESTIONS	MY THOUGHTS AND QUESTIONS
<p>2. What strengths in the Standards for Mathematical Practice do students exhibit? What do the students look and sound like when they are exhibiting these strengths? Consider the following practices:</p> <ul style="list-style-type: none"> • Make sense of problems and persevere while solving them. • Reason abstractly and quantitatively. • Construct viable arguments and critique the reasoning of others. • Model with mathematics. • Use appropriate tools strategically. • Attend to precision. • Look for and make use of structure. • Look for and express regularity in repeated reasoning. <p>3. In thinking about the ways that you support students to build strengths to develop the habits of mind to do mathematics, what are some ways you help students to</p> <ul style="list-style-type: none"> • Use and apply a problem-solving mindset • Develop and use communication skills • Use reasoning and proof • Seek and apply connections • Use and apply representations <p>4. How do you organize a structure where students share or showcase these strengths in the classroom?</p>	

Sources: National Council of Teachers of Mathematics (NCTM). (2000). *Principles and standards for school mathematics*. Reston, VA: Author; National Governors Association Center for Best Practices & Council of Chief State School Officers. (2010). *Common core state standards for mathematics*. Retrieved from <http://www.corestandards.org/Math>; National Research Council (2001). *Adding it up: Helping children learn mathematics*. Washington, DC: National Academies Press.



As You Read: New Insights. Use the following chart to record your notes about Chapter 2: Turn Around Mathematical Proficiencies, Processes, and Practices.

Thoughts on Chapter 2: Turn Around Mathematical Proficiencies, Processes, and Practices					
READING NOTES	PAGE	I WONDER ...	THIS CONNECTS TO ...	I'D LIKE TO TRY ...	I AM WORRIED ABOUT ...



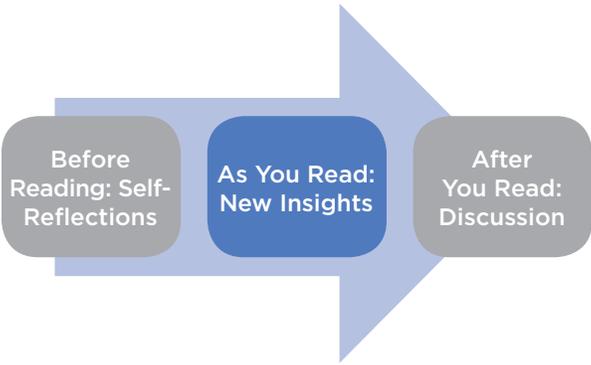
After You Read: Discussion. Now that you have read Chapter 2: Turn Around Mathematical Proficiencies, Processes, and Practices and considered the professional learning discussion questions, you may revisit them as a guide to organizing your discussion. Make sure to identify particular Turnaround moments and then some actionable items for individual participants or groups to actually attempt (Try Its!) and (Spotlights). For this reading, we suggest that you begin with the Spotlight on Your Practice: Spotting Strong Problem-Solving Behaviors activity to launch your discussion.

SHARING	TURNAROUNDS	TRY ITS!	SPOTLIGHTS

PREREADING QUESTIONS

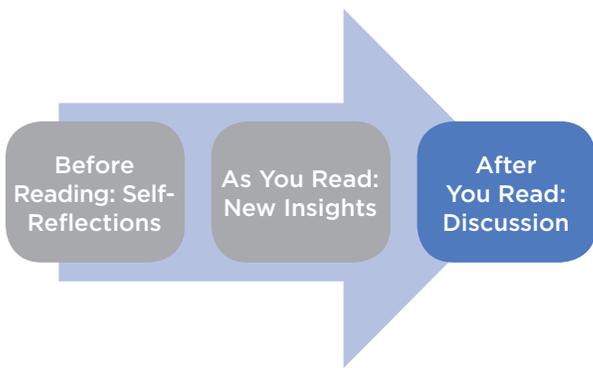
MY THOUGHTS AND QUESTIONS

3. Select two pieces of student work. Select one piece of work that represents a student who you consider to have some mathematical strengths and one piece of work that represents a student who you consider to have some mathematical challenges. Briefly describe the characteristics of each piece of student work.
4. How do you typically address students' mathematics thinking that you would say is advanced? How do you typically address students' mathematics thinking that is incorrect or exhibits naive understandings?
5. Consider the following content areas and describe the strengths that you might see students exhibit at your grade level:
- Meaning of Number and Operations and Algebraic Thinking
 - Developing Strategies to Add, Subtract, Multiply, and/or Divide
 - Understanding Number and Operations—Fractions
 - Understanding of Geometry



As You Read: New Insights. Use the following chart to record your notes about Chapter 3: Your Students' Mathematics Content Strengths.

Thoughts on Chapter 3: Your Students' Mathematics Content Strengths					
READING NOTES	PAGE	I WONDER ...	THIS CONNECTS TO ...	I'D LIKE TO TRY ...	I AM WORRIED ABOUT ...



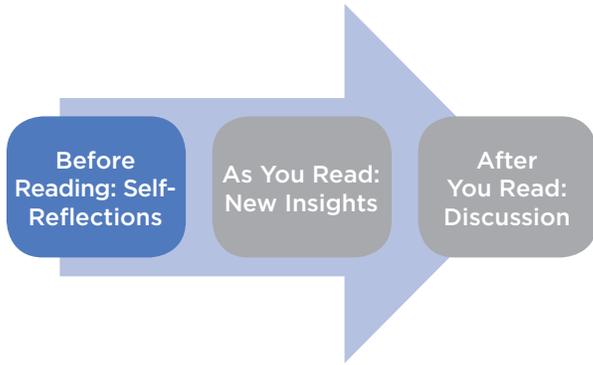
After You Read: Discussion. Chapter 3 explores students' mathematics content strengths in Number and Operations and Algebraic Thinking; Strategies for Adding, Subtracting, Multiplying, and Dividing; Fractions; and Geometric Thinking. After reading the chapter, begin your group session by sharing some of your thoughts. As with the previous chapters, you may begin by revisiting the discussion questions introduced in the Before Reading section. Use the graphic organizer below to record your ideas from the group discussion, identify particular Turnaround moments from the group, and then determine the next steps (Try Its!) and (Spotlights) for individuals or the group to attempt. In this chapter, there are many Try It! activities. For this discussion session, we suggest that you begin by engaging in one of the Try It! activities as a team.

SHARING	TURNAROUNDS	TRY ITS!	SPOTLIGHTS



Teaching Turnaround Three: Design Instruction From a Strengths-Based Perspective

Chapter 4: Turn Around Grouping Practices



Before Reading: Self-Reflections. As you prepare to read Chapter 4: Turn Around Grouping Practices, jot down some of your own thoughts and ideas about the questions below. Then make sure to revisit them as you share and discuss.

PREREADING QUESTIONS	MY THOUGHTS AND QUESTIONS
<ol style="list-style-type: none"> How are students grouped for mathematics instruction in your classroom? What were the considerations you used to base your decisions to group students in this way? Describe a typical mathematics lesson in your class. Include lesson structures such as launch, facilitate, grouping, and closure. 	

PREREADING QUESTIONS

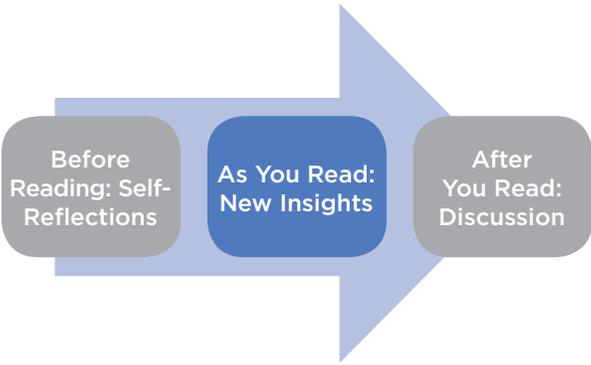
MY THOUGHTS AND QUESTIONS

3. As you consider the *Principles to Actions* (2014) Effective Mathematics Teaching Practices, what opportunities might you have to recognize and build your students' strengths? How will you do the following:

- Establish mathematics goals to focus learning
- Implement tasks that promote reasoning and problem solving
- Use and connect mathematical representations
- Facilitate meaningful mathematical discourse
- Pose purposeful questions
- Build procedural fluency from conceptual understanding
- Support productive struggle in learning mathematics
- Elicit and use evidence of student thinking

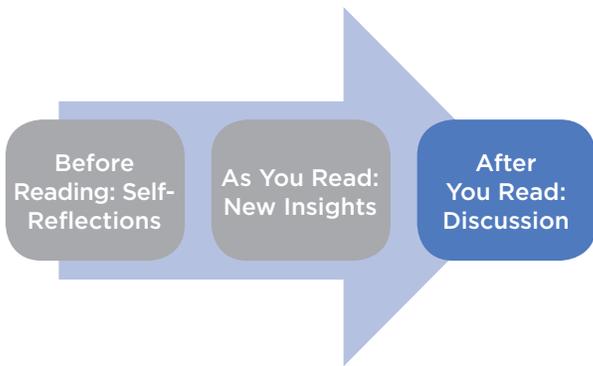
4. How do you make decisions about how students are grouped for learning activities? What characteristics about your students or the mathematics content do you consider?

5. How does the lesson's purpose influence the mathematics grouping decisions that you make?



As You Read: New Insights. Use the chart below to record your notes about your reading of Chapter 4: Turn Around Grouping Practices.

Thoughts on Chapter 4: Turn Around Grouping Practices					
READING NOTES	PAGE	I WONDER ...	THIS CONNECTS TO ...	I'D LIKE TO TRY ...	I AM WORRIED ABOUT ...



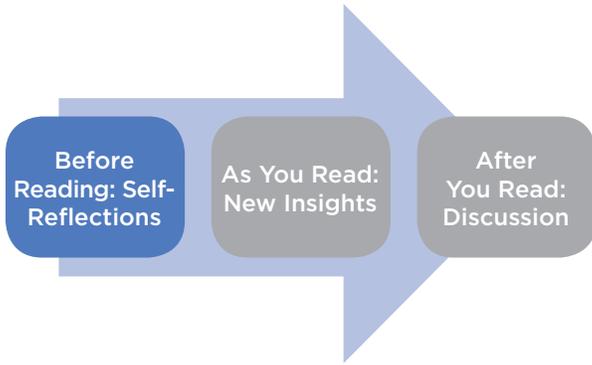
After You Read: Discussion. Chapter 4 explores strengths-based grouping practices. After reading the chapter, begin your group session by sharing some of your thoughts about the reading. As with previous chapter discussions, begin by revisiting the discussion questions introduced in the Before Reading section. Use the graphic organizer below to record your ideas from the group discussion, identify particular Turnaround moments from the group, and then determine the next steps (Try Its!) and (Spotlights) for individuals or the group. As the group shares, each participant can record interesting thoughts, summaries, or new questions developed from the reading. As noted previously, the Turnarounds section is a place to record new insights, and the Try Its! and Spotlights are the actionable items that the group will want to try after reading and discussing the chapter.

SHARING	TURNAROUNDS	TRY ITS!	SPOTLIGHTS



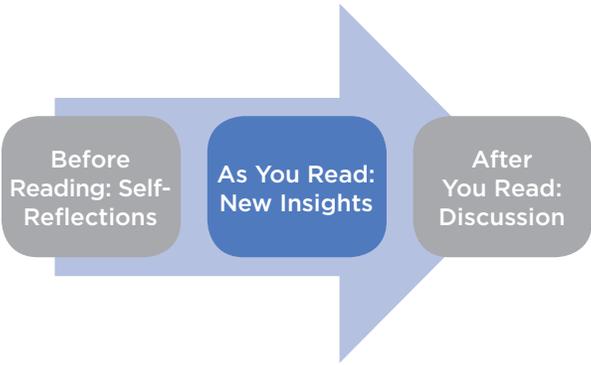
Teaching Turnaround Three: Design Instruction From a Strengths-Based Perspective

Chapter 5: Turn Around Tasks



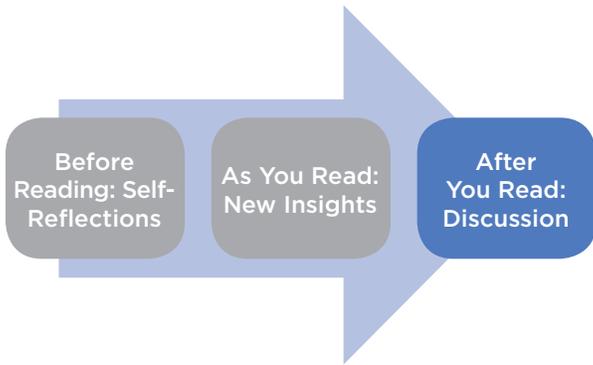
Before Reading: Self-Reflections. As you prepare to read Chapter 5: Turn Around Tasks, jot down some of your own thoughts and ideas about the questions below. Revisit them as you share and discuss the chapter.

PREREADING QUESTIONS	MY THOUGHTS AND QUESTIONS
<ol style="list-style-type: none"> 1. How do you select the mathematics tasks that you implement in your classroom? 2. What do you notice about how the students respond to particular tasks? 3. What opportunities do students have to showcase their strengths through mathematics tasks? 	



As You Read: New Insights. Use the chart below to record your notes from the chapter.

Thoughts on Chapter 5: Turn Around Tasks					
READING NOTES	PAGE	I WONDER ...	THIS CONNECTS TO ...	I'D LIKE TO TRY ...	I AM WORRIED ABOUT ...



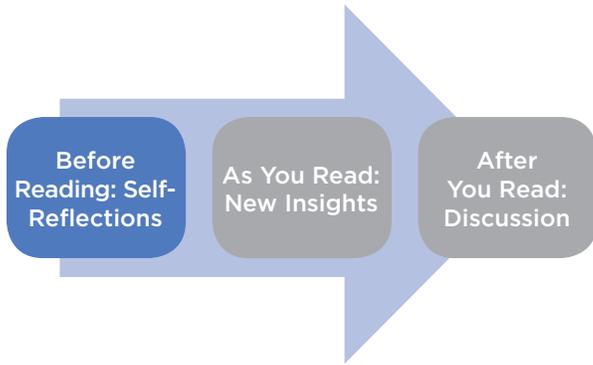
After You Read: Discussion. Chapter 5 explores how tasks can be designed and adapted to recognize and build students' strengths. After reading this chapter, begin your group session by sharing some of your thoughts about the reading. You may begin by revisiting the discussion questions introduced in the Before Reading section. As with previous chapters, use the following graphic organizer to record your ideas from the group discussion, identify particular Turnaround moments from the group, and determine the next steps (Try It!) and (Spotlights) for individuals or the group. As the group shares, each participant can record interesting thoughts, summaries, or new questions developed from the reading. The Turnaround section is a place to record new insights, and the Try Its! and Spotlight sections are the actionable items that the group will want to try after reading and discussing the chapter. For this chapter, we suggest beginning with the Spotlight on Your Practice: Analyzing Your Tasks.

SHARING	TURNAROUNDS	TRY ITS!	SPOTLIGHTS



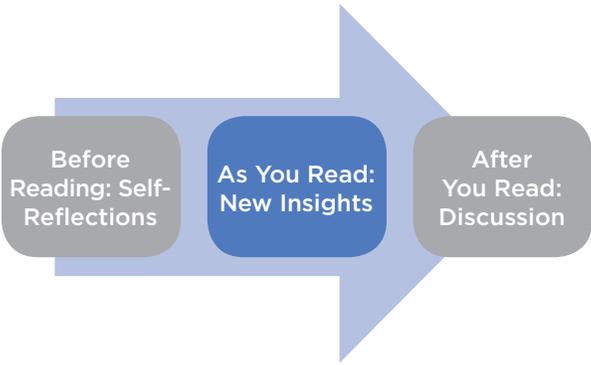
Teaching Turnaround Three: Design Instruction From a Strengths-Based Perspective

Chapter 6: Turn Around Feedback



Before Reading: Self-Reflections. As you prepare to read Chapter 6: Turn Around Feedback, jot down some of your own thoughts and ideas about the questions below. Revisit them as you share and discuss with the group.

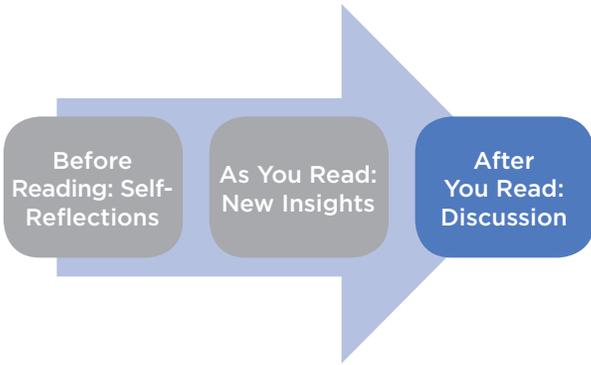
PREREADING QUESTIONS	MY THOUGHTS AND QUESTIONS
<ol style="list-style-type: none"> Describe how you give, collect, receive, and facilitate feedback in your mathematics classroom. Consider teacher-to-student feedback. How do you generally provide feedback to students? What does that feedback look like? Give examples. Why is wait time important to a strengths-based classroom? What does your wait time look like? 	



As You Read: New Insights. Use the following chart to record your notes.

Thoughts on Chapter 6: Turn Around Feedback					
READING NOTES	PAGE	I WONDER...	THIS CONNECTS TO...	I'D LIKE TO TRY...	I AM WORRIED ABOUT...

After You Read: Discussion. Chapter 6 explores the ways teachers give, receive, and facilitate feedback, classroom feedback opportunities, and formative assessment techniques. After reading this chapter, begin your group session by sharing some of your thoughts about the reading. You may begin by revisiting the discussion questions introduced in the Before Reading section. Use the following graphic organizer to record your ideas from the group discussion, identifying particular Turnaround moments from the group, and then determining next steps (Try Its!) and (Spotlights) for individuals or the group. As the group shares, participants can record interesting thoughts, summaries, or new questions developed from the reading. As with the other chapter reviews, note that the Turnaround section is a place to record new insights and the Try Its! and Spotlight sections are the actionable items that the group will want to try after reading and discussing the chapter. For this chapter, we suggest beginning with the Spotlight on Your Practice: Reflecting on Your Feedback activity.

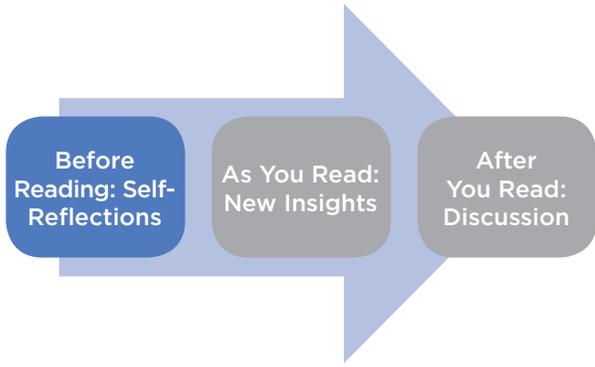


SHARING	TURNAROUNDS	TRY ITS!	SPOTLIGHTS



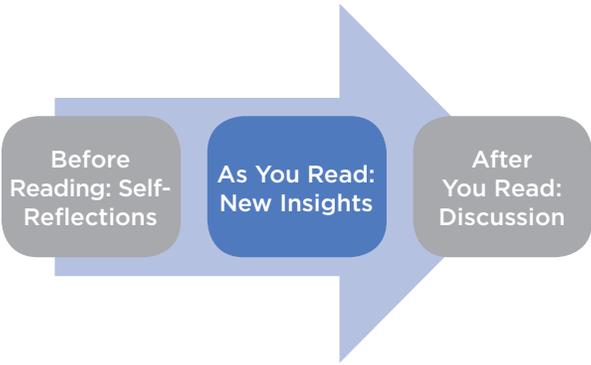
Teaching Turnaround Four: Help Students Develop Their Points of Power

Chapter 7: Turn Around Students' Identities



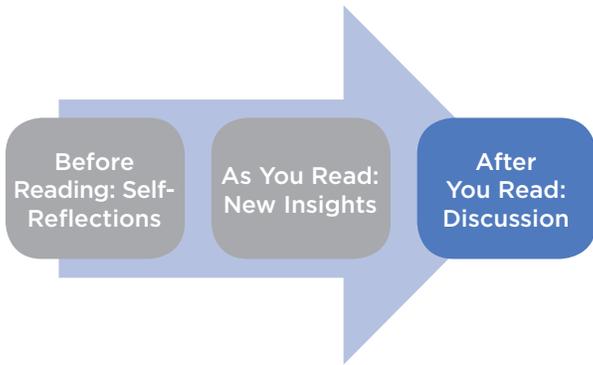
Before Reading: Self-Reflections. As you prepare to read Chapter 7: Turn Around Students' Identities, jot down some of your own thoughts and ideas about the questions below. Revisit them as you share and discuss.

PREREADING QUESTIONS	MY THOUGHTS AND QUESTIONS
<ol style="list-style-type: none"> 1. How would you describe in general your students' mathematical identities? How do you believe those identities have been shaped? Can you talk about one or two of your students as an example? 2. What opportunities do students have to reflect on their own mathematical identities? What opportunities do they have to reflect on the mathematical identities of others? Do students see themselves as capable of doing mathematics? 	



As You Read: New Insights. Use the following chart to record your notes.

Thoughts on Chapter 7: Turn Around Students' Identities					
READING NOTES	PAGE	I WONDER ...	THIS CONNECTS TO ...	I'D LIKE TO TRY ...	I AM WORRIED ABOUT ...



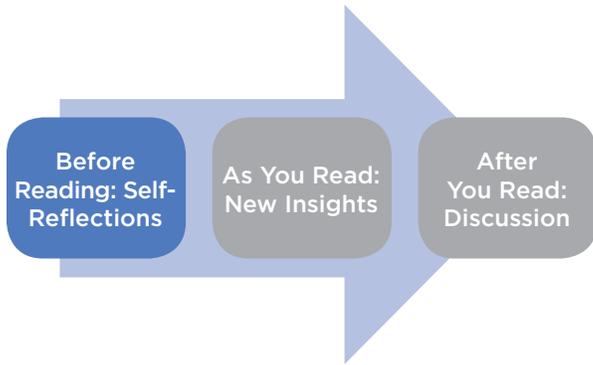
After You Read: Discussion. Chapter 7 explores the ways we can support students to develop positive mathematics identities. After reading this chapter, begin your group session by sharing some of your thoughts about the reading. You may begin by revisiting the discussion questions introduced in the Before Reading section. Use the following graphic organizer to record your ideas from the group discussion, identifying particular Turnaround moments from the group, and then determining next steps (Try Its!) and (Spotlights) for individuals or the group. As the group shares, participants can record interesting thoughts, summaries, or new questions developed from the reading. As with the other chapter reviews, note that the Turnaround section is a place to record new insights and the Try Its! and Spotlight sections are the actionable items that the group will want to try after reading and discussing the chapter. For this chapter, we suggest beginning with the Spotlight on Your Practice: Looking for Opportunities.

SHARING	TURNAROUNDS	TRY ITS!	SPOTLIGHTS



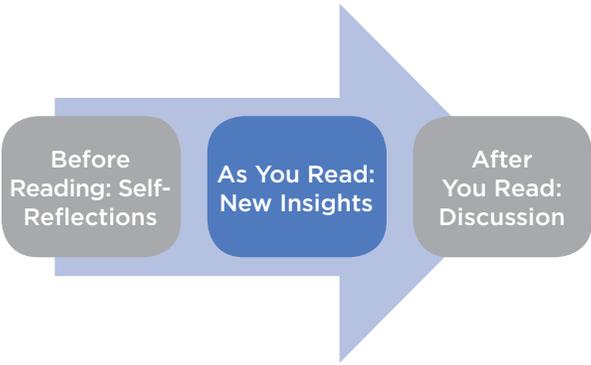
Teaching Turnaround Five: Promote Strengths in the School Community

Chapter 8: Turn Around Professional Learning Communities



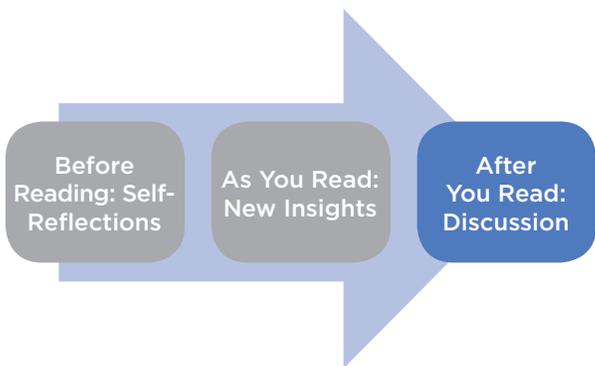
Before Reading: Self-Reflections. As you prepare to read Chapter 8: Turn Around Professional Learning Communities, jot down some of your own thoughts and ideas about the questions below. Revisit them as you share and discuss.

PREREADING QUESTIONS	MY THOUGHTS AND QUESTIONS
<ol style="list-style-type: none"> 1. How are you supported by the wider school community to share your strengths? 2. How does the professional learning community ensure that teachers' strengths are developed and shared? 3. What are ways that you communicate your mathematics vocabulary, methods, and approaches to colleagues so that your whole school has consistency in the way mathematics is taught? 	



As You Read: New Insights. Use the following chart to record your notes.

Thoughts on Chapter 8: Turn Around Professional Learning Communities					
READING NOTES	PAGE	I WONDER...	THIS CONNECTS TO...	I'D LIKE TO TRY...	I AM WORRIED ABOUT...



After You Read: Discussion. Chapter 8 explores the ways teachers collaborate in professional learning communities within their teams, across grade levels, and throughout the whole school. After reading this chapter, begin your group session by sharing some of your thoughts about the reading. You may begin by revisiting the discussion questions introduced in the Before Reading section. Use the following graphic organizer to record your ideas from the group discussion, identifying particular Turnaround moments from the group, and then determining next steps (Try Its!) and (Spotlights) for individuals or the group. As the group shares, participants can record interesting thoughts, summaries, or new questions developed from the reading. As with the other chapter reviews, note that the Turnaround section is a place to record new insights and the Try Its! and Spotlight sections are the actionable items that the group will want to try after reading and discussing the chapter. For this chapter, we suggest beginning with the Spotlight on Your Practice: Professional Learning Experiences.

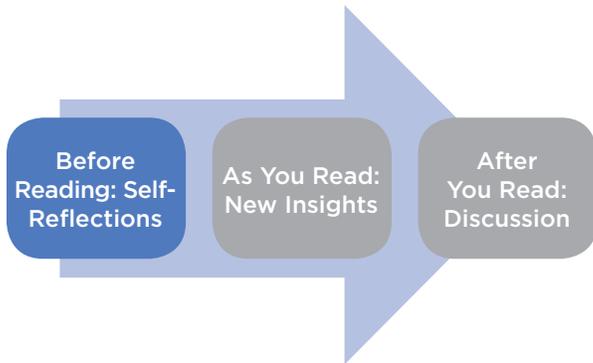
SHARING	TURNAROUNDS	TRY ITS!	SPOTLIGHTS



Teaching Turnaround Five: Promote Strengths in the School Community

Chapter 9: Turn Around Family Communication

Epilogue: Turn Around Reflection



Before Reading: Self-Reflections. As you prepare to read Chapter 9: Turn Around Family Communication, jot down some of your own thoughts and ideas about the questions below. Revisit them as you share and discuss.

PREREADING QUESTIONS	MY THOUGHTS AND QUESTIONS
<ol style="list-style-type: none"> Describe the ways that you communicate with families about how their student is learning mathematics. What does this communication look like? Consider gathering together a sample of emails, newsletters, and so on that you have used to review before reading the chapter. Sometimes teachers receive challenging communications from families about how mathematics is taught. What might be some of the reasons this type of communication occurs? 	

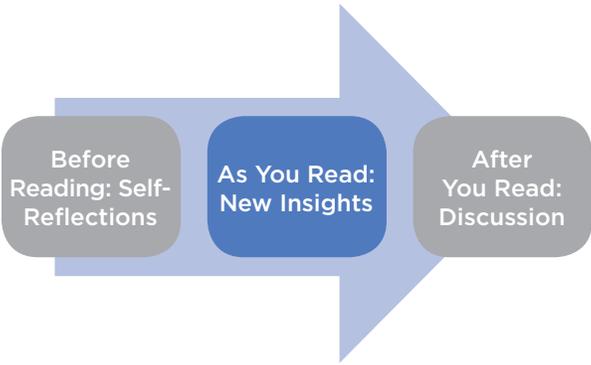
PREREADING QUESTIONS

MY THOUGHTS AND QUESTIONS

3. What have you noticed about how families communicate about mathematics learning to their students?

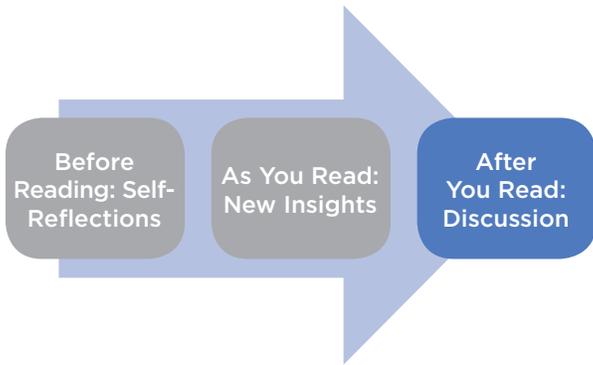
4. What are some resources that you use to communicate positive mathematics learning experiences of students to their families? How do you engage in the mathematics teaching and learning that is going on in the classroom?

5. How do you communicate students' strengths in family conferences?



As You Read: New Insights. Use the following chart to record your notes.

Thoughts on Chapter 9: Turn Around Family Communication					
READING NOTES	PAGE	I WONDER ...	THIS CONNECTS TO ...	I'D LIKE TO TRY ...	I AM WORRIED ABOUT ...



After You Read: Discussion. Chapter 9 explores the ways teachers and schools communicate with families. After reading this chapter, begin your group session by sharing some of your thoughts about the reading. You may begin by revisiting the discussion questions introduced in the Before Reading section. Use the following graphic organizer to record your ideas from the group discussion, identifying particular Turnaround moments from the group, and then determining next steps (Try Its!) and (Spotlights) for individuals or the group. As the group shares, participants can record interesting thoughts, summaries, or new questions developed from the reading. As with the other chapter reviews, note that the Turnaround section is a place to record new insights and the Try Its! and Spotlight sections are the actionable items that the group will want to try after reading and discussing the chapter. For this chapter, we suggest beginning with the Spotlight on Your Practice: Notes to Families.

SHARING	TURNAROUNDS	TRY ITS!	SPOTLIGHTS

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