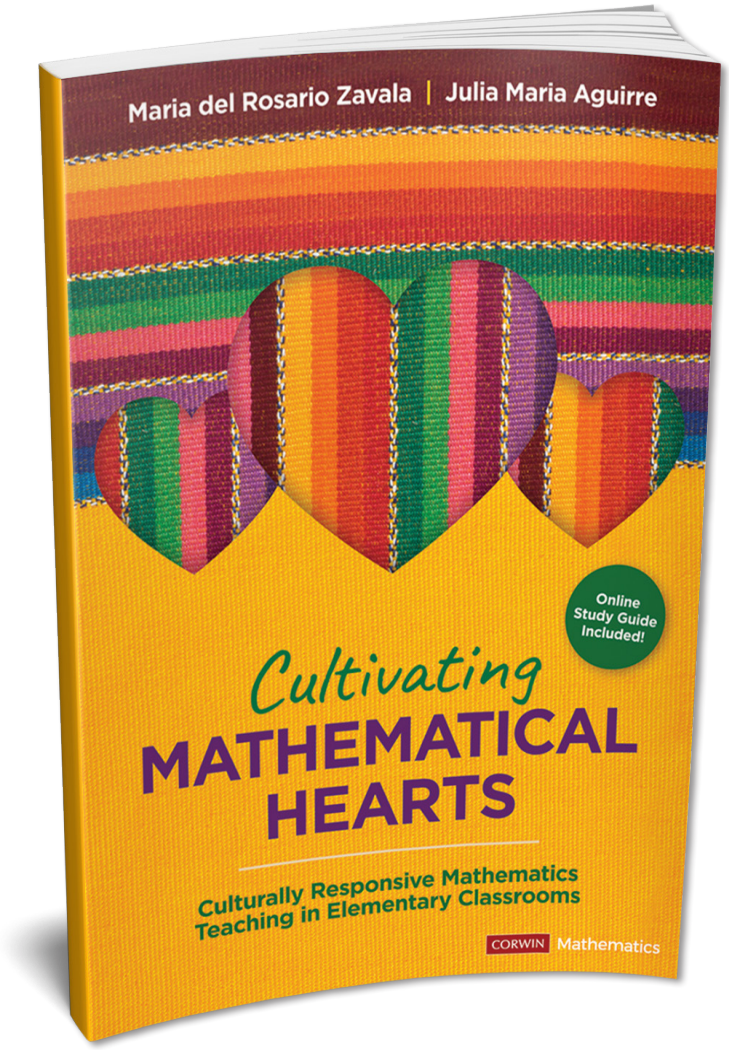


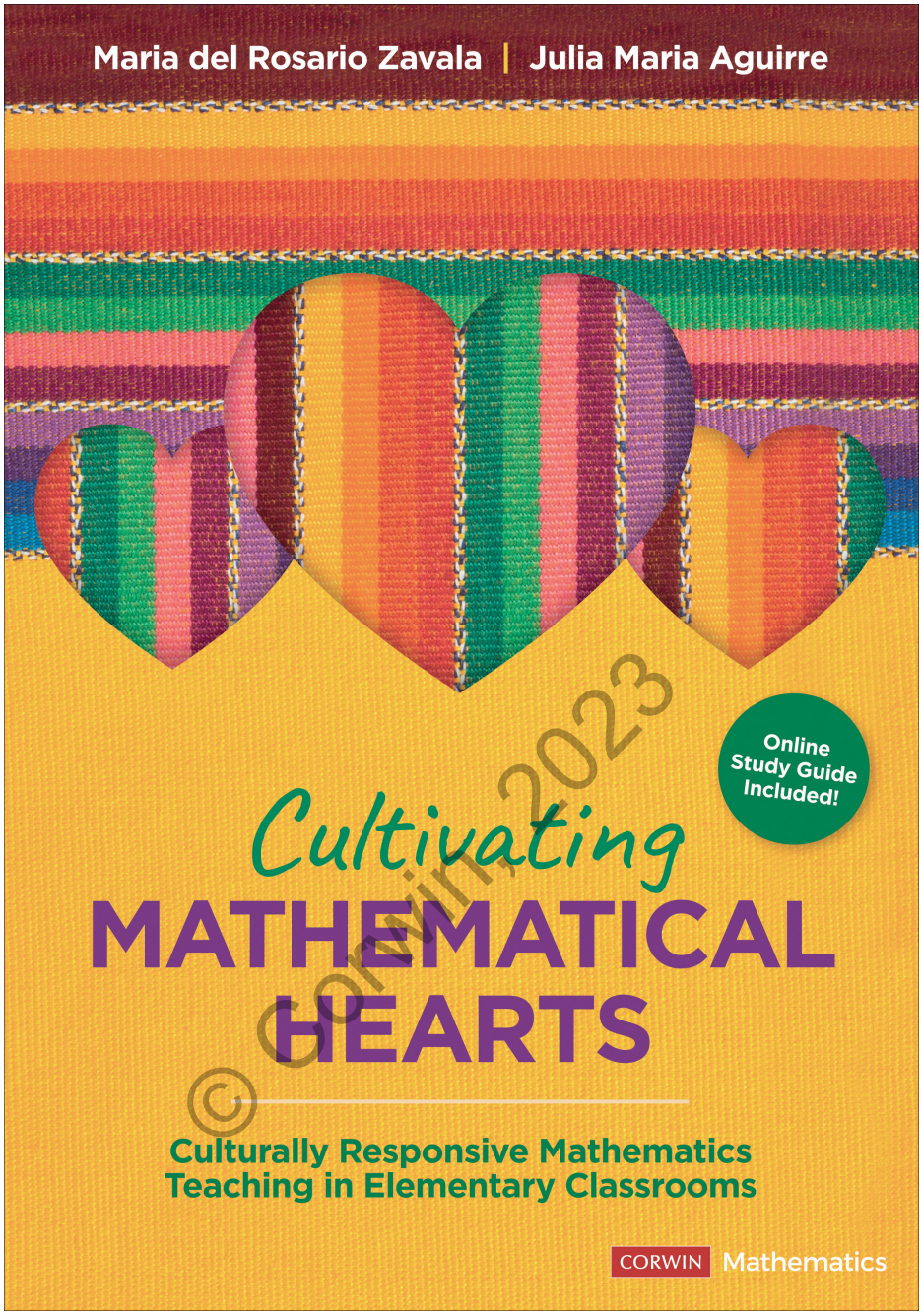
Thank you

FOR YOUR INTEREST IN CORWIN

Please enjoy this complimentary excerpt from Cultivating Mathematical Hearts.

LEARN MORE about this title!

CORWIN



CULTIVATING MATHEMATICAL HEARTS

CULTURALLY RESPONSIVE MATHEMATICS TEACHING IN ELEMENTARY CLASSROOMS

BOOK STUDY GUIDE

Note to Facilitators

Welcome to the book study guide for *Cultivating Mathematical Hearts: Culturally Responsive Mathematics Teaching in Elementary Classrooms*. Every book study group or professional learning community is different and unique. If you are formally facilitating a book study group, this is meant to serve you as a guide, but you should feel free to make it your own and tailor it to the group you are facilitating. Here are some helpful tips and reminders:

Goals

Book studies are opportunities for educators to explore a professional book with peers, discuss and reflect on key takeaways, and apply that learning to their professional practice. Any book study can be successful as long as you and your other participants set out clear goals and success criteria and as long as all participants are dedicated to achieving these goals. If one of your goals is to implement the strategies in the book and evaluate them for success, be sure to define as a group what you want that success to look like (i.e., did the implementation achieve the desired outcome?).

Length and timing

This depends on the length of the book, how in-depth you want to go into each topic, and the availability of your participants. The following guide is not meant to be prescriptive, and you may not cover all of it, but you can adapt it to the needs of your group.

This guide offers suggestions for breaking up the reading across multiple days. If participants don't have the time to read independently before coming to the meetings, you can break up the reading into groups instead and engage in a jigsaw activity. A jigsaw is a cooperative learning strategy that enables each participant of a "home" group to specialize in one aspect of a topic or one section of reading, which they engage in with an "expert group." They then return to their home group and share what they've learned. Here are instructions for facilitating a jigsaw. If your group engages in this format, be sure to determine whether participants have a shared understanding of the content before moving to the "into the classroom" sections.

Format

Many groups prefer to meet face-to-face, but it's important to consider all participants' availability and accessibility. Book studies can be equally successful online via video conference, in an online forum, or in social media.

This book study guide offers three types of interaction:

- During Reading questions and reflections
- As a Group discussion questions
- Into the Classroom activities

You can do or assign those that make sense to you and that fit within your time budget. If you are engaging in a jigsaw format, you may choose to have participants focus on the During Reading questions together. The Into the Classroom sections ask participants to try something in the classroom. Be sure to spend time agreeing on what criteria will determine whether use of particular intervention or strategy had the impact that was expected. Also leave some time at the beginning of the next meeting, or set a separate interim time, to debrief and analyze the results of the inquiry—that is, prompting participants to describe what happened, forming hypotheses, and determining next steps.

Setting norms

In order to establish a safe, trusting, respectful, and committed environment for discussing a book in a professional setting, it's critical to work with your group to co-create and agree to certain norms. Norms help provide a clear pathway, ensure all voices are heard and respected, and prevent a single voice from dominating the discussion. They ensure all members of the group can engage in a productive and meaningful experience from which they can learn and grow. Here are some guidelines and processes for setting:

- Learning Forward's Creating Norms Tool
- Edutopia's Guide to Using Book Clubs to Navigate Challenging Topics

Be sure to leave ample time during the first session, or have a separate launch session, to focus on co-creating norms.

Facilitate like a pro

Some participants will share their thoughts and opinions readily, while others may feel more hesitant and let their more outgoing colleagues guide the discussion. It's important to engage your quieter participants—without putting them on the spot—and keep the conversation moving smoothly without letting any one person dominate the discussion. Try allowing your participants to discuss with a partner or a small group or let everyone have a moment to share.

Support

Lack of support—or even any appearance of it—can quickly derail any forward progress. Make it clear from the start that your participants will be supported by their administration and colleagues as they try out their new learning in the classroom. Plus make it a point to follow up regularly to see how they've applied their learning and share what participants are doing successfully.

Note to Participants

Welcome to the book study for ***Cultivating Mathematical Hearts: Culturally Responsive Mathematics Teaching in Elementary Classrooms***. We know professional development is important to you, and we also recognize that there are a lot of demands on your time. We have designed this book study to be collaborative so that most weeks the group is splitting the recommended in-class activities among the members of the book study. Each book study participant comes to the group ready to share in-class strategies and activities that they were assigned. That way everyone gets the benefit of all of the learning, strategies, and activities shared in *Cultivating Mathematical Hearts* without having to personally practice every strategy.

By the end of the book study, as a group you will

- Understand the importance and benefit to adopting a culturally responsive approach to teaching mathematics
- Learn ways to help children see mathematics as a mirror and a lens that reflects who they are, who they are becoming, and helps them analyze the world around them
- Understand and identify the three strands of Culturally Responsive Mathematics Teaching: 1. Knowledges and Identities; 2. Rigor and Support; and 3. Power and Participation, and the 3 dimensions of each strand
- Learn the nine dimensions of the Culturally Responsive Mathematics Teaching Tool (CRMT2) and how they can help you create meaningful mathematical learning spaces for all children that affirm their whole beings
- Learn and practice instructional moves that help you enact different strands/dimensions of the CRMT2 on your journey to becoming a culturally responsive mathematics educator
- Read examples of teachers who have successfully supported culturally, linguistically, and neuro-diverse mathematical learners
- Consider how you can retool your practice through cycles of design, analysis, and reflection to help you feel more creative, innovative, reflective, and effective in your mathematics teaching

We've even created a Cultivating Mathematical Hearts Chart at the end of this document, so that you have a record of the activities/strategies that you and your colleagues have tried over the course of the book study with notes about what you did, what worked, what you would change, and what you will commit to working on.

Thank you for selecting *Cultivating Mathematical Hearts* for your book study. And thank you for the hard (and joyful) work you do every day to teach mathematics to our children in ways that recognize and reaffirm their humanity.

Part 1

PREFACE

During Reading

1. What comes to mind when you think of the phrase "Culturally Responsive Mathematics Teaching"? What emotions does this phrase elicit for you?

2. Based on your own experience, write your own definition of Culturally Responsive Mathematics Teaching.

3. What do you envision when you think of a classroom that "cultivates joy and justice with mathematics"? What do you see? Who do you see?

4. After reading the Preface, write down three things you hope to take away from this book or this book study.

As a Group

1. Share one teaching experience in the last three years in which you wished you could do something more or different for a student who was struggling with mathematics.

2. Share one way in the past you have tried to connect with students' families and communities to foster a connection between home and school.

CHAPTER 1: Culturally Responsive Mathematics Teaching: Purpose and Principles

Synopsis

- Provides a definition and background of Culturally Responsive Mathematics Teaching (CRMT) as an intersection of Pedagogical Content Knowledge, Culturally Responsive Pedagogies, and Rehumanizing Mathematics
- Offers three guiding principles to steer your heart-compass while engaging in CRMT
- Consider the essential questions that guide the design of a culturally responsive mathematics classroom

Reading Timeline (here's how you might divide the reading into manageable segments)

Day 1: From beginning of the chapter until Our Guiding Principles

Day 2: Read from Our Guiding Principles to the end of the chapter

During Reading

1. Reflect upon the sentence *"We see children as whole people; they are not extensions of content or data, or solely adults in the making: They are living, breathing, thinking, emotional, and social—they are full human beings."* Note how this connects to your belief about teaching mathematics. Think about what you are already doing in your classroom to honor the unique human qualities your students bring to their mathematics learning.

2. Using Figure 1.1, identify which parts of the roots of CRMT are familiar to you and which are new. Which are you especially curious to learn more about?

3. Consider the three guiding principles that anchor the move toward CRMT and answer the following questions:

   a. *Acknowledge that our current system of mathematics education is inequitable and oppressive.* What specific examples can you think of where the cultural view of mathematics privileges some people and marginalizes others?

b. *Take actions that center students and their families inside and outside the mathematics classroom.* Think about students in your classroom today. In what ways have you drawn upon what you know about families and communities outside of school when planning your mathematics lessons?

c. *Be accountable to ourselves, our children, our families, and our communities.* How have you supported your students' mathematical identity as capable knowers and doers of mathematics? Within the mathematics context, how have you affirmed your students' cultural, linguistic, familial, and community identities?

As a Group

1. Consider the definition of CRMT offered in Chapter 1:

   > "CRMT involves a set of specific pedagogical knowledge, dispositions, and practices that privilege mathematics, mathematical thinking, cultural and linguistic funds of knowledge, and issues of power and social justice in mathematics education. CRMT interrogates and innovates mathematics instruction to be a transformative and humanizing experience for everyone."

   Share what words or phrases stand out to you. Look back at the definition you wrote while reading the Introduction to the book. Share some ways that this definition is similar to and different from the definition you wrote.

2. Discuss the list of essential questions that teachers designing math instruction through the lens of CRMT ask themselves. Share what evidence or actions you may already take that speaks to one or more of these essential questions. Note ideas your colleagues are sharing as well.

Into the Classroom

1. Look at an upcoming mathematics lesson you have planned and consider it through the lens of the eight essential questions that help us frame CRMT. Perhaps you are already doing some of these things, and perhaps you aspire to do more! Think about what the current state looks like and what a future transformed state *could* look like. Your reading in the forthcoming chapters will help make this increasingly more concrete.

HOW DOES MY LESSON . . .	CURRENT STATE	FUTURE STATE
Connect mathematics with relevant issues in students' lives		
Support creativity, broaden what counts as mathematical knowledge, affirm positive mathematical identities		
Create opportunities to elicit, express, and build on students mathematical thinking		
Enable all students to closely explore and analyze math concepts, procedures, and problem-solving/reasoning strategies		
Maintain high rigor with high support for all students		
Make space for multilingual learners to be central participants in mathematics activities		
Distribute mathematics authority and make space for multiple forms of knowledge and communication		
Disrupt status differences, entrenched stereotypes, and inequitable power relationships present in all mathematics classrooms		

Select one element you'd like to try in your next lesson and build that into your plan. Once you have conducted the lesson, record your experiences and reflections in the **Cultivating Mathematical Hearts Recording Chart** at the end of this guide. Share your reflections in a conversation with a colleague or coach.

CHAPTER 2: Unpacking Culturally Responsive Math Teaching: Retooling Your Pedagogy

Synopsis

- Introduces the Culturally Responsive Mathematics Teaching Tool (CRMT2)
- Explores how use of the tool can help you critically evaluate your mathematics teaching and look for opportunities to become a more culturally responsive mathematics educator through the lens of the three strands and the nine dimensions
- Provides actions and activities to incorporate the CRMT2 in your daily mathematics planning, teaching, reflection, and feedback

Reading Timeline (here's how you might divide the reading into manageable segments)

Day 1: Read from beginning of chapter to Strand 3: Power and Participation

Day 2: Read from Strand 3: Power and Participation to end of chapter

During Reading

1. Think about the opening vignette about Simon and reread the questions about moving beyond a surface-level connection to the child and the mathematics in the task. Using the questions as prompts, write a short paragraph that answers the question, How can knowing Simon's ethnic origin and what languages he speaks make a difference to how he experiences the task?

2. Look at the first strand of the CRMT2, Knowledge and Identities. Of the three dimensions, which do you already feel is a strength for you? What are some initial ideas for how you might build on that strength? Where do you feel you have the most growth potential? Why?

3. Look at the second strand of the CRMT2, Rigor and Support. Of the three dimensions, which do you already feel is a strength for you? What are some initial ideas for how you might build on that strength? Why?

4. Look at the third strand of the CRMT2, Power and Participation. Of the three dimensions, which do you already feel is a strength for you? What are some initial ideas for how you might build on that strength? Why?

5. Look at the list of ways to use the CRMT2 to analyze your math teaching practices. Select one of the actions you feel most immediately drawn to (self-reflection or designing, analyzing, and adapting curriculum) and note which one it is.

As a Group

1. Share your paragraphs about your thoughts on Simon and his identity as a mathematics learner.
2. Working in pairs, share your ideas on which dimensions of Strands 1, 2, and 3 represent potential growth for you. Choose one dimension you'd like to commit to working on in the next two weeks. Write it here:

3. Find a partner who chose the same actions for using CRMT2 to analyze one's math teaching practices. Discuss how you can work collaboratively to support each other's engagement with that action as you work through each strand of the CRMT2.

Into the Classroom (After Group Meeting)

1. In preparation for the next meeting, take the **CRMT Confidence Survey** and plan to share your reflections about it at the next meeting.
2. Select three students you feel you know well and three you would like to learn more about. Complete an inventory that catalogs the various things you know or would like to know about each student's identity. For the students you don't know as well as you'd like, take some time to learn more about them.

STUDENT NAME	WHAT IS THIS CHILD'S ETHNIC/RACIAL BACKGROUND?	WHAT LANGUAGES DOES THIS CHILD SPEAK?	WHAT IS THIS CHILD'S FAMILY STRUCTURE?	WHERE DOES THIS CHILD LIVE?	WHAT DOES THIS CHILD ENJOY DOING OUTSIDE OF SCHOOL?	WHAT DOES THIS CHILD ENJOY ABOUT MATH?

After creating your chart, record your experiences and reflections in the **Cultivating Mathematical Hearts Recording Chart** at the end of this guide.

CHAPTER 3 (2 sessions): Knowledge and Identities

Synopsis

- Introduces the three dimensions of the Knowledge and Identities Strand: Centering Cultural and Community Funds of Knowledge; (Re)Humanizing Mathematics; and Honoring Student Thinking and Ideas
- Shares approaches to instruction and a rubric for evaluating your classroom for each dimension
- Uses teaching stories to illustrate aspects of each dimension
- Offers some activities to start with and deepen your professional learning

SESSION 1

Reading Timeline (here's how you might divide the reading into manageable segments)

Day 1: Read from beginning of chapter to Dimension 2: (Re)Humanizing Mathematics

During Reading

1. Reflect on the three big ideas introduced at the beginning of the chapter. How do these ideas resonate with you? How do these ideas perhaps differ from a more traditional or teacher-centered view of mathematics instruction?

2. In the Approaches to Instruction for Dimension 1 (Centering Cultural and Community Funds of Knowledge), the text talks about the importance of relevance. How do you think about relevance? When you work to make mathematics relevant to your class, whose experiences usually get prioritized? What path do you usually take—looking for something relevant to most children or looking to prioritize certain children's experiences? After reading this chapter, have your ideas about relevance changed?

3. Figure 3.2 shows the rubric for Centering Cultural Community Funds of Knowledge. Where would you place the typical mathematics instruction in your classroom on the scale? Why?

As a Group

1. With a partner, take turns sharing your reflections on the CRMT Confidence Survey from the last session. What goals for professional and personal growth did you set for yourself as a culturally responsive teacher of mathematics?

2. With the same partner, share your reflections on where you might place your classroom on the Rubric for Dimension 1 (Figure 3.2). Discuss which of the strategies for doing the consciousness-raising heart work to teach through Community Funds of Knowledge you want to try first. Make a plan to get started.

Into the Classroom (After Group Meeting)

1. Take one action in the Mathematizing your World Activity. Jot down your notes and be prepared to share in the next session. Record your experiences and reflections in the **Cultivating Mathematical Hearts Recording Chart** at the end of this guide.

SESSION 2

Reading Timeline (here's how you might divide the reading into manageable segments)

Day 2: Read beginning of Dimension 2: (Re)Humanizing Mathematics to Dimension 3: Honoring Student Thinking and Ideas

Day 3: Read from beginning of Dimension 3: Honoring Student Thinking and Ideas to the end of the chapter

During Reading

1. Reflect on these two statements:

> *"Dehumanized Mathematics is a series of disconnected facts or predetermined procedures and processes sanctioned by a dominant group, which is how mathematics is usually presented. Therefore, rehumanizing mathematics is a creative and dynamic endeavor, inviting diverse thought, innovation, and shared understanding of knowledge."*

And

> *"Rehumanizing mathematics also explicitly challenges fixed notions of who can and cannot be "mathematical. . . . School mathematics has historically played a role in ranking and sorting children through the use of standardized test scores and curricular tracking. Our hyperfocus on "achievement gaps" has resulted in children being objectified with labels such as high/low, slow/fast, or disheartening terms like 'uneducable' or 'bubble "kids.'" (Horn, 2007; Gutiérrez, 2008; Gutiérrez, 2010/2013)*

How do these two statements resonate with you? How do traditional practices in school mathematics described as dehumanizing contrast with the vision for a rehumanized mathematics classroom?

2. Think about the list of rehumanizing instructional practices. Of these actions, what is one thing you will commit to trying in your next mathematics lesson? Write it down here.

3. How frequently do you feel you listen for the ways a student's ideas make a valuable contribution to the collective sense-making of the class? How do you probe for understanding around contributions you may not initially see as mathematically valuable?

As a Group

1. Share in a small group your noticings and wonderings from the Mathematize Your World Activity from the previous session. What activity did you choose, and what did you learn?
2. Choose either the rubric for Dimension 2 or Dimension 3. Rate your typical classroom instruction on the scale. With a partner, trade and discuss ideas for two next steps for moving up on the scale.

Into the Classroom (After Group Meeting)

1. Do the activity Learning to Listen for a Diversity of Ideas. Record your experiences and reflections in the **Cultivating Mathematical Hearts Recording Chart** at the end of this guide.

CHAPTER 4 (2 sessions): Rigor and Support

Synopsis

- Introduces the three dimensions of the Rigor and Support Strand: Sustaining High Cognitive Demand, Scaffolding Up, and Affirming Multilingualism
- Shares approaches to instruction and a rubric for evaluating your classroom for each dimension
- Uses teaching stories to illustrate aspects of each dimension
- Offers some activities to start with and deepen your professional learning

SESSION 1

Reading Timeline (here's how you might divide the reading into manageable segments)

Day 1: Read from the beginning of the chapter until Dimension 5: Scaffolding Up

During Reading

1. Use Figure 4.1 to evaluate some of the tasks that you are currently using in your classroom. What percentage of your tasks fall into the low-level cognitive demand column? What percentage are in the high-level cognitive demand column?

2. What is the benefit to engaging students with mathematical modeling set in cultural and community contexts they can relate to?

3. Review the tasks that you determined are high cognitive demand. What are some ways you can *also* situate them in cultural and community contexts that are meaningful to *your* students?

Into the Classroom (Before Group Meeting)

1. Try one of the actions in the Mathematizing the World activity. Record your experiences and reflections in the **Cultivating Mathematical Hearts Recording Chart** at the end of this guide.

2. Looking at your analysis of your current tasks and where they exist on The Task Analysis Guide (Figure 4.1), determine where you would rank the tasks as you plan to implement them on the Rubric for Dimension 4. Why do you rank them there? What might you do to move one level up?

As a Group

1. Share tasks that you determined were high cognitive demand. Discuss what ways you thought of to also situate them in cultural and community contexts.

2. Share which action in the Mathematizing the World activity you engaged in. Share what happened, what was the result, and what new insights you had.

3. Read the vignette of Ms. Rosario and Alejandro. Discuss what instructional moves Ms. Rosario makes to maintain high-level cognitive demand for all the children in the classroom. Discuss what moves you might also engage with in your instruction to maintain the rigor of your mathematical tasks for all students.

Into the Classroom (After Group Meeting)

1. Do the Learning to Let Go! Activity. Afterward, record your experiences and reflections in the **Cultivating Mathematical Hearts Recording Chart** at the end of this guide.

SESSION 2

Reading Timeline (here's how you might divide the reading into manageable segments)

Day 2: Read from Dimension 5: Scaffolding Up to Dimension 6: Affirm Multilingualism

Day 3: Read from Dimension 6: Affirm Multilingualism until the end of the chapter

During Reading

1. Examine the Examples of Social and Analytic Scaffolding (Figure 4.6). What do you notice? What do you wonder?

2. After reading about the Dimension of Scaffolding Up, how has your understanding shifted about the purpose of scaffolds and the kinds of scaffolds that are beneficial in a culturally responsive mathematics classroom?

3. Reflect on the quote: "When we talk about affirming multilingualism, we are talking about affirming children. Language is identity. It is not possible to disentangle who students are from the languages they utilize to make sense of the world, be a part of their family, and communicate with others." In a discourse-rich environment where students are working collaboratively on high cognitive demand tasks, what are the drawbacks of prioritizing English as the primary language? Conversely, how does affirming multilingualism and engaging in translanguaging benefit all learners?

Into the Classroom (Before Group Meeting)

1. Select an upcoming lesson you are planning for. Think about the scaffolds you plan to build into the lesson and additional scaffolds you will have as "back pocket" scaffolds. Use the ideas from Figure 4.7 to plan your scaffolds.

As a Group

1. Working with a partner, share ideas about the scaffolds you have each developed for your next lessons. Share the task your students will be working on and what scaffolds you'll have in place and at-the-ready for each lesson phase.

2. In a small group, select two of the strategies to affirm multilingualism in your classroom that Zavala and Aguirre shared from the book *Teaching Math to Multilingual Learners*:
   - Focus on positioning
   - Situate mathematical tasks in culturally relevant contexts
   - Facilitate effective partnerships between peers and multilingual learners
   - Use visuals, gestures, and other scaffolding techniques

- Take time to explicitly make sense of how language works
- Encourage writing in mathematics
- Involve parents and families (Chval et al, 2021).

Together, determine one thing you can each do in an upcoming lesson to support and affirm multilingualism in your classroom.

Into the Classroom (After Group Meeting)

1. Do the Taking Stock of How You Center Multilingualism activity. Share your inventory with a trusted colleague. What do you already do that you will keep doing? What will you do next to improve in the area of the learning environment, communication with families and caregivers, or adjusting mathematics instructional routines and tasks to show the value you place on multilingualism?

CHAPTER 5 (2 sessions): Power and Participation

Synopsis

- Introduces the three dimensions of the Power and Participation Strand: Distributing Intellectual Authority, Disrupting Power and Status, and Analyzing and Taking Action
- Shares approaches to instruction and a rubric for evaluating your classroom for each dimension
- Uses teaching stories to illustrate aspects of each dimension
- Offers some activities to start with and deepen your professional learning

SESSION 1

Reading Timeline (here's how you might divide the reading into manageable segments)

Day 1: Read from beginning of chapter until Dimension 8: Disrupting Status and Power

During Reading

1. Think about these questions and jot down your thoughts:

   Whose voice is heard during your math class (power)?

   Who is positioned to be powerful, and why (status)?

   What power does mathematics have as a tool to help us analyze and make positive change in our world (action)?

2. Reading through the list of instructional approaches to Distributing Authority, which of these do you feel you already do? Which would you like to do more or better?

Into the Classroom (Before Group Meeting)

1. Do step one of the Mapping Mathematical Authority Activity: Student Interviews. Plan to come to the next meeting equipped with your interviews.

As a Group

1. Read the vignette about Ms. Nguyen's fourth-grade classroom. Discuss what moves you see Ms. Nguyen make that help distribute authority in the classroom.

2. With a partner, take turns working on Steps 2–4 of the Mapping Mathematical Authority activity. Based on your findings, make a plan for some strategies to distribute authority in your next lesson. Be brave! It will be messy at first!

Into the Classroom (After Group Meeting)

1. After engaging in the strategies to distribute mathematical authority in your lesson, record your thoughts in the **Cultivating Mathematical Hearts Recording Chart** at the end of this guide.

SESSION 2

Reading Timeline (here's how you might divide the reading into manageable segments)

Day 2: Read from Dimension 8: Disrupting Status and Power to Dimension 9: Analyzing and Taking Action

Day 3: Read from Dimension 9: Analyzing and Taking Action to the end of the chapter.

During Reading

1. The section on Dimension 8: Disrupting Status and Power describes how status is perceived in classrooms and how often students' abilities are evaluated through "data dives" that result in sorting, deficit labeling, ability grouping, tracking, and constructing status in the classroom. What evidence of these practices do you see in your classroom or school? How do your students view themselves and their peers as mathematically capable people? What patterns do you notice?

2. Dismantling status and power requires a significant mindshift in how we see students as capable humans rather than data points. Likewise, our institutions and systems are deeply entrenched in the status quo, and we are deeply enculturated to view students' mathematical competence in certain ways. How has status and power impacted you as a math learner in school? What barriers and what opportunities do you see to making this mindshift, both for yourself, and schoolwide?

3. The section on Dimension 9: Analyzing and Taking Action states, "By clearly anchoring ourselves in students' communities and funds of knowledge, we are likely to find opportunities to position students as change agents for their communities." How can you use mathematics with your students in ways that position them as change agents? Why is this important?

As a Group

1. With a partner, take turns discussing where your classroom falls on the rubric for Disrupting Status and Power. Using the list of instructional approaches to Disrupting Status and Power, make a list of the ways you personally can disrupt patterns of status and power in your own classroom. List as many instructional moves as you can, and make a commitment to try three in the next two weeks.
2. In small groups, read the list of instructional approaches for Analyzing and Taking Action. Choose one that resonates with the group and brainstorm ways you can individually or collectively take action on one instructional approach.

Into the Classroom (After Group Meeting)

1. Do the Telling New Stories activity, selecting either one of the options for creating a math origin story or a student strengths story. Be prepared to share your story in the next meeting.
2. Choose one option in the Taking Action activity. You can record your experience and reflections in the **Cultivating Mathematical Hearts Recording Chart** at the end of this guide.

Part 2: CHAPTERS 6, 7, 8, 9: Let Your Heart Guide You

Each of the chapters in Part 2 is written by an educator and describes their journey using the CRMT2 to transform their mathematics classrooms into culturally responsive spaces.

Synopsis

- Chapter 6 showcases the use of CRMT2 to adapt a first-grade district-provided lesson into a lesson that is more culturally responsive.
- Chapter 7 highlights the learning that unfolds over a longer period of time through a teacher-coach partnership to transform a fourth-grade classroom into a culturally responsive mathematics classroom.
- Chapter 8 describes how a bilingual educator used the CRMT2 in a dual-language second-grade classroom that centered students' perspectives, voices, and thinking.
- Chapter 9 describes a Culturally Responsive Mathematics Teaching (CRMT) approach in two distinct special education spaces with the same teacher.

Reading Timeline (here's how you might divide the reading into manageable segments)

Choose one chapter to read that speaks to your heart as an educator or offers a perspective you'd like to learn more about. You may choose to break the reading up over two or more days.

During Reading

As you read, take note of where you see deliberate use of any of the nine dimensions of the CRMT2 framework. You can use **the Cultivating Mathematical Hearts Recording Chart** to document your noticings.

As A Group

1. Share your story from the Telling New Stories activity from Chapter 5. Discuss how doing this activity made you feel and what new ideas or aha moments it created for you.
2. Find a partner who read the same chapter you did. Together share your reflections from the **Recording Chart** about what CRMT instructional moves you saw the subjects of the story making.
3. Work together to answer the reflection questions at the end of the chapter.

EPILOGUE

During Reading

1. Read the excerpt from Norm Mattox's poem "The Teacher Space" that appears in the book *Black Calculus* (2021). This poem speaks to Norm's experiences as a teacher and how he connects how he felt as a young student to what kind of space he wants to hold for his students.
2. Reflect on what words and phrases speak to you.
3. Write your own poem. What is your own Teacher Space poem? Feel free to write an individual poem or a collective poem as a team where you each contribute a few lines.

Into the Classroom (After Group Meeting)

1. Look back at the definition of CRMT you wrote when reading the Introduction. Now write a new definition. What has changed? How has your thinking shifted?

2. Go back to the CRMT Confidence Survey from Chapter 2 and retake it. Have your responses shifted? How?

3. Commit to continuing your journey to become a more liberatory and culturally responsive mathematics teacher. Write down one way you will enact each of these dimensions in the coming thirty days.

I will:

- Center cultural and community funds of knowledge by:

- (Re)Humanize mathematics by:

- Honor student thinking and ideas by:

- Sustain high cognitive demand by:

- Scaffold up by:

- Affirm multilingualism by:

- Distribute intellectual authority by:

- Distribute status and power by:

_____

_____

- Analyze and Take Action by

_____

_____

References

Chval, K. B., Smith, E., Trigos-Carrillo, L., & Pinnow, R. J. (2021). *Teaching math to multilingual students: Positioning English learners for success.* Corwin.

Mattox, N. (2021). *The Teacher Space.* In N. Mattox, *Black calculus.* Nomadic Press.

CULTIVATING MATHEMATICAL HEARTS RECORDING CHART

CHAPTER 1—Introduction to CRMT: 8 Essential Questions Reflection Activity

ACTIVITY/STRATEGY
What I Did
What Worked
What I Would Change
What I Will Try to Do Regularly

CHAPTER 2—Getting to Know My Students Chart

ACTIVITY/STRATEGY
What I Did
What Worked
What I Would Change
What I Will Try to Do Regularly

CHAPTER 3—Knowledge and Identities: Centering Cultural and Community Funds of Knowledge

ACTIVITY/STRATEGY
What I Did
What Worked
What I Would Change
What I Will Try to Do Regularly

CHAPTER 3—Knowledge and Identities: (Re)Humanizing Mathematics

ACTIVITY/STRATEGY
What I Did
What Worked
What I Would Change
What I Will Try to Do Regularly

CHAPTER 3—Knowledge and Identities: Honoring Student Thinking and Ideas

ACTIVITY/STRATEGY
What I Did
What Worked
What I Would Change
What I Will Try to Do Regularly

CHAPTER 4—Rigor and Support: Sustaining High Cognitive Demand

ACTIVITY/STRATEGY
What I Did
What Worked
What I Would Change
What I Will Try to Do Regularly

CHAPTER 4—Rigor and Support: Sustaining High Cognitive Demand

ACTIVITY/STRATEGY
What I Did
What Worked
What I Would Change
What I Will Try to Do Regularly

CHAPTER 4—Rigor and Support: Scaffolding Up

ACTIVITY/STRATEGY
What I Did
What Worked
What I Would Change
What I Will Try to Do Regularly

CHAPTER 4—Rigor and Support: Affirming Multilingualism

ACTIVITY/STRATEGY
What I Did
What Worked
What I Would Change
What I Will Try to Do Regularly

CHAPTER 5—Power and Participation: Distributing Intellectual Authority

ACTIVITY/STRATEGY
What I Did
What Worked
What I Would Change
What I Will Try to Do Regularly

CHAPTER 5—Power and Participation: Disrupting Status and Power

ACTIVITY/STRATEGY
What I Did
What Worked
What I Would Change
What I Will Try to Do Regularly

CHAPTER 5—Power and Participation: Analyzing and Taking Action

ACTIVITY/STRATEGY
What I Did
What Worked
What I Would Change
What I Will Try to Do Regularly

CHAPTER 6—Using CRMT2 to Adapt a First-Grade District-Provided Lesson

CRMT DIMENSIONS	WHAT THE TEACHER(s) DID
Centering Cultural and Community Funds of Knowledge	
(Re)Humanizing Mathematics	
Honoring Student Thinking and Ideas	
Sustaining High Cognitive Demand	
Scaffolding Up	
Affirming Multilingualism	
Distributing Intellectual Authority	
Distributing Status and Power	
Analyzing and Taking Action	

CHAPTER 7—Using CRMT2 to Transform the a Fourth-Grade Mathematics Classroom Over Time

CRMT DIMENSIONS	WHAT THE TEACHER(s) DID
Centering Cultural and Community Funds of Knowledge	
(Re)Humanizing Mathematics	
Honoring Student Thinking and Ideas	
Sustaining High Cognitive Demand	
Scaffolding Up	
Affirming Multilingualism	
Distributing Intellectual Authority	
Distributing Status and Power	
Analyzing and Taking Action	

CHAPTER 8—Corazones Matemáticas: CRMT2 in Bilingual Classrooms

CRMT DIMENSIONS	WHAT THE TEACHER(s) DID
Centering Cultural and Community Funds of Knowledge	
(Re)Humanizing Mathematics	
Honoring Student Thinking and Ideas	
Sustaining High Cognitive Demand	
Scaffolding Up	
Affirming Multilingualism	
Distributing Intellectual Authority	
Distributing Status and Power	
Analyzing and Taking Action	

CHAPTER 9—CRMT2 in Special Education Spaces

CRMT DIMENSIONS	WHAT THE TEACHER(s) DID
Centering Cultural and Community Funds of Knowledge	
(Re)Humanizing Mathematics	
Honoring Student Thinking and Ideas	
Sustaining High Cognitive Demand	
Scaffolding Up	
Affirming Multilingualism	
Distributing Intellectual Authority	
Distributing Status and Power	
Analyzing and Taking Action	