Facilitation Guide for

Powerful Practice:

Evidence-informed Math Teaching

In-Classroom Edition

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Explanation

This companion to "Powerful Practice: Evidence-Informed Math Teaching" was developed to address the limitations of the asynchronous, online modality of the course. While the course covers a wide range of current research on math instruction, its virtual format lacks collaborative activities. To remedy this, regular synchronous meetings can provide a collaborative space for participants to focus on applying course content directly to classroom routines, offering a more comprehensive learning experience. Structured to ensure consistency and reliability, this guide facilitates effective discussion to aid in transference of knowledge from theory to practice.

How to Use This Guide

Each module in the course has its own proposed facilitation plan for a synchronous meeting. The structure is consistent throughout the modules with some variations regarding the prompts. Here is a breakdown of the consistent elements of a typical meeting plan:

- **Module Title and Objectives** – These are included at the top of each plan to ground all discussions in the common objectives of that module. If any modifications are made to the plan, they should remain consistent with these objectives.
- **Intro** – The facilitator takes attendance, and the participants are provided some space to connect since the last meeting. A general prompt is provided for each of these to get the group in a discussion mindset.
- **Implementation share-out** – Before this session, a few participants have volunteered to document their efforts in trying out a concept from the previous session in their own learning environment. Participants could share successes, challenges, observations, anything notable. Each participant would be expected to volunteer for this at least once throughout the course. During the first meeting, the facilitator will need to explain this part of each session and clearly describe expectations.
- **Transition shift** – The facilitator prompts participants to connect the topics discussed during the implementation share-outs, which will be focused on the concepts of the last session, to the topics introduced in this session. Prompts are provided to aid in this transition.
- **Workbook reflection** – This discussion builds on workbook reflections, offering prompts to delve deeper into workbook questions. Some prompts are module-specific while others are general, fostering exploration and sharing of perspectives. Note that some modules have very light workbook content while others are quite rich. Each module's Workbook reflection section features a consistent closing prompt to allow participants to bring up any topics that might not have been addressed yet in the previous questions.
- **Application discussion** – This discussion is meant to take the concepts and ideas from the course and bring them into each individual's learning plan framework. They are designed to continue along from the workbook reflection portion, so there does not have to be a stark delineation between this discussion and the one regarding the workbook. Depending on how the workbook discussion advances, this might integrate right in with those prompts. However, this part of the meeting gives participants time and assistance in imagining how the concepts from the course materials can translate into new classroom teaching practices. This goal should be kept in mind when flexibly adjusting this allocated time of the meeting and is reflected in the fact that this section has the most time devoted to it.

- **Wrap up** - Quick synthesis of totality of discussions and consistent prompt that challenges participants to apply their learning directly to their practice. Also, during this time, the facilitator should ask participants to volunteer for the implementation share-out for the next meeting.

While the above elements are present in each module's plan, there is no expectation that each session will, or should, be the same. With that in mind, here are some elements of each meeting plan that could be adjusted:

- **Overall time allotment** – The estimates are a broad range that can allow for anywhere from 45 minutes to an hour and a half, or longer if the discussions warrant it. Some topics might require longer workbook discussions while others might spark lengthier application talks. More people sharing during the implementation share-out will require more time too. Speaking of which . . .
- **Implementation share-out time** – Since this portion of the meeting will depend on how many people volunteer for it, this will obviously fluctuate from meeting to meeting.
- **Prompts** - The prompts provided for each module vary from one to another to take advantage of the aspects of each topic. The specific prompts on each module plan are a suggestion but not necessary. If some prompts are not sufficient, not applicable to your group, or if you would like to supplement with additional ideas, please add any of your own. There is also a list of general workbook and application questions in the Appendix to this guide.
- **Alternative meeting activity ideas**
  - **Resource summary** – Participants could agree to read/watch/listen to one of the additional resources provided in the "Want to Explore More?" area at the end of each module. At the next session, they would summarize the resource to the group, answering the questions "How did this resource expand on the ideas introduced in the module? Did it conflict with any points from the course? How could any of these ideas help inform us in crafting a more successful and robust learning environment in our classrooms?"
  - **Routine practice** – Participants could role play the strategies and ideas presented in the module using lessons or examples from their curriculum materials. Facilitators could highlight areas in the module where this type of activity could be useful and organize pairs to share roles.
  - **Shared planning time** – Participants could take advantage of the time with colleagues to collaboratively plan to implement the strategies and ideas from the module into an upcoming lesson. Then they could share with the whole group and reflect together to help anticipate and mitigate any possible challenges.

How the Brain Learns Math: An Overview

- Examine what we know about how the brain develops math generalizations
- Describe how this science has guided major shifts in our understanding of best practices in math instruction
- Examine how the neuroscience of learning math opens doors to students furthest from opportunity and disrupts narratives about who can excel in math

Schedule:

5 minutes – **Settle in, take attendance, Intro question**: What do you want to get out of our discussions? Why not just work through the modules on your own?

10-15 minutes - **Participants' implementation share-out** (During first meeting, facilitator will need to explain overall expectations for this part of each session and perhaps discuss norms for this particular section of future meetings)

3-5 minutes – **Transition into current session, connection between concepts**: Why do you think the author decided to start the modules with how the brain learns math?

10-20 minutes – **Workbook reflection**:

1. Which prompt from the workbook made you think the hardest? What about it was so thought-provoking?
2. What narratives exist about math that either implicitly or explicitly exclude people from fully exploring it? How do these then reinforce themselves?
3. Was there any question in this section of the workbook that you wanted to discuss with the rest of the group? What about that question were you looking to explore further?

15-25 minutes – **Application discussion prompts:**

1. Regarding the method in which our brain learns math, which aspects are most important for us to keep in mind while we are planning lessons?
2. What elements of the four big implications for math instruction, (1. balance conceptual understanding and procedural fluency 2. focus on the most important concepts 3. create coherence by connecting concepts 4. allow for and support productive struggle), are already present in your current classroom routines? What benefit would there be to emphasizing these aspects even more or could some of these be scaled back without losing their current benefits?
3. How might your current curriculum materials help in emphasizing the four big implications for math instruction? Where might there be conflicts? How might any inconsistencies be reconciled?

5-10 minutes - **Wrap up:** Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out

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Rigor: Let the Standards be your Guide

- Examine how the three aspects of rigor – Conceptual Understanding, Procedural Fluency, and Application – allow students to make sense of and use math
- Determine which aspects of rigor are required by grade-level standards, why, and how this should influence instructional decisions

Schedule:

5 minutes – **Settle in, take attendance, Intro question**: How did this module's definition of rigor compare to your own idea of rigor?

10-15 minutes – **Participants' implementation share-out**

3-5 minutes – **Transition into current module, connection between concepts**: What connections do you see between the ways the brain learns math, as described in the "How the Brain Learns Math" module, and the three pillars of rigor: conceptual understanding, procedural skill & fluency, and application?

10-20 minutes – **Workbook reflection**:

1. Before this module, had you ever seen students use the butterfly method for adding fractions? Can you think of any similar types of methods that help students remember procedures but might not connect to understanding?
2. Like the activity in part 1 called "Conceptual Understanding in Standards", how does identifying the aspect of rigor designated in a specific standard help in planning your instructional activities?
3. Were there any prompts in this section of the workbook that you wanted to discuss with the rest of the group? What about them were you looking to explore further?

20-30 minutes – **Application discussion prompts:**

1. Which pillar of rigor (conceptual understanding, procedural skill & fluency, and application) is emphasized most in your current classroom routines? What benefit would there be to emphasizing the other aspects more?
2. Procedural skill and fluency are often conflated with memorizing math facts. How does this module maintain the importance of having certain facts quickly accessible in working memory but differentiate that from procedural skill and fluency? How is that reflected in your lesson plans?
3. How might your current instructional materials help in emphasizing the three aspects of rigor? What facets of the materials help the most with each aspect? Are there any aspects of rigor that aren't supported as much as the others? How could you make sure that your students are supported in all aspects?

5-10 minutes - **Wrap up:** Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out

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Procedural Fluency and Conceptual Understanding: Two Sides of the Same Coin

- Examine how Conceptual Understanding supports Procedural Skill & Fluency
- Explain the role of task sequences in building Procedural Skills & Fluency supported by Conceptual Understanding
- Discuss the pitfalls of learning with procedures disconnected from Conceptual Understanding

Schedule:

5 minutes – **Settle in, take attendance, Intro question**: Think of a mathematical concept that you have struggled with in the past. Why do you think you might have struggled with this concept?

10-15 minutes – **Participants' implementation share-out**

3-5 minutes – **Transition into current module, connection between concepts**: When teachers at your school talk about rigor, are they usually referring to more procedural skill and fluency or more conceptual understanding?

10-20 minutes – **Workbook reflection**:

1. What might be some benefits of starting with conceptual understanding before developing procedural fluency? What might be some challenges?
2. Can you think of an example when using reasoning is more efficient than using the standard United States algorithm?
3. What connections do you see between the 8 standards of mathematical practice and conceptual and procedural understanding?
4. Were there any prompts in this section of the workbook that you wanted to discuss with the rest of the group? What about them were you looking to explore further?

20-30 minutes – **Application discussion prompts:**

1. Which aspect of procedural fluency (accuracy, efficiency, flexibility) do your students struggle with the most? How might you make connections to conceptual understanding to improve this aspect of their procedural fluency?
2. How might collaboration lead to deeper understanding of math concepts?
3. Think of a concept you have taught recently or plan to soon. What might be a sequence of 3-4 tasks to build conceptual understanding that supports procedural skill and fluency? How might your current instructional materials support this sequencing?

5-10 minutes - **Wrap up:** Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out

Fluency: It's More Than Speed

- Define procedural fluency
- Examine examples of procedural fluency objectives, standards, and related tasks
- Investigate research-based best practices for developing procedural fluency
- Analyze common scenarios related to procedural fluency

Schedule:

5 minutes – **Settle in, take attendance, Intro question**: Has your perspective on fluency shifted while engaging in this course? If so, how and why?

10-15 minutes – **Participants' implementation share-out**

3-5 minutes – **Transition into current module, connection between concepts**: Do you see procedures, such as algorithms, more as rules or as the result of mathematical structure and relationships? Can you provide an example?

10-20 minutes – **Workbook reflection**:

1. What is the difference between memorization and procedural fluency?
2. Do you ever use your fingers when doing everyday mathematics? Why might a student (or an adult) choose to use their fingers when computing, even if they are already fluent in that skill?
3. Were there any prompts in this section of the workbook that you wanted to discuss with the rest of the group? What about them were you looking to explore further?

20-30 minutes – **Application discussion prompts:**

1. Which aspect of procedural fluency (accuracy, efficiency, flexibility) do your students struggle with the most? How might you make connections to conceptual understanding to improve this aspect of their procedural fluency?
2. Think of your current students. Which phase of fluency development (informal, derived, fluency) do each of your students currently exhibit for your grade-level fluency skill? Is each student in a unique phase, or in different phases depending on the number set? How can you use this information to plan instruction?

5-10 minutes - **Wrap up:** Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out

Learning Goals: Focus on the Math, Not the Trick

- Identify tricks in math instruction
- Describe how replacing tricks with mathematical generalizations yields deeper learning
- Explain the role learning goals play in deeper math learning
- Examine how students develop math generalizations

Schedule:

5 minutes – **Settle in, take attendance, Intro question**: What strategies or techniques from previous school years do you feel you have to reteach, correct, or clarify each year?

10-15 minutes – **Participants' implementation share-out**

3-5 minutes – **Transition into current module, connection between concepts**: What are some math tricks that you remember from your time as a student?

10-20 minutes – **Workbook reflection**:

1. Can you think of an example when using reasoning is more efficient than using the standard United States algorithm?
2. What is the difference between a generalization and a rule? Which one better supports long-term procedural fluency (accuracy, efficiency, flexibility).
3. Tricks remove productive struggle from the classroom. What might be some benefits of allowing students to struggle with math tasks?
4. What might be some of the outcomes of using learning goals that focus on what students will need to understand rather than what students will be able to do?
5. Were there any prompts in this section of the workbook that you wanted to discuss with the rest of the group? What about them were you looking to explore further?

20-30 minutes – **Application discussion prompts:**

1. If a student uses a math trick, what strategies might you use to support their deeper understanding of the concept while honoring their prior learning?
2. Rather than teaching tricks and shortcuts, what sorts of questions might you ask students that scaffold their learning without stepping in to do the work for them?

5-10 minutes - **Wrap up:** Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out

Learning Goals: What's Language Got to Do with It?

- Describe how language and math are interdependent
- Examine examples of math language goals
- Explain why language goals are critical in creating instruction that supports student understanding of mathematics

Schedule:

5 minutes –   **Settle in, take attendance, Intro question**: What math terms or phrases have confused you in the past? How did you deal with that confusion?

10-15 minutes –   **Participants' implementation share-out**

3-5 minutes –   **Transition into current module, connection between concepts**: What math terms or phrases have students in your class been confused about or misunderstood recently?

10-20 minutes –   **Workbook reflection**:

1. In what ways do you provide all students opportunities to use receptive and productive language skills to engage in mathematics?
2. Pre-teaching vocabulary is a recommended practice in English language arts but is considered an unproductive practice in mathematics. Why might teaching vocabulary in context be more effective in a mathematics classroom?
3. Which of the three key strategies to support students' language development do you feel the most comfortable with? Which one do you think offers the most room for growth?
4. Were there any prompts in this section of the workbook that you wanted to discuss with the rest of the group? What about them were you looking to explore further?

20-30 minutes –   **Application discussion prompts:**

1. What barriers might prevent a student from engaging in classroom discussion? What might be some strategies to eliminate those barriers?
2. What can you do in the moment if you use imprecise mathematical language (such as "reduce" or "plug in") out of habit? How might you model draft thinking and/or productive struggle in the moment?
3. Which of the four Committing to Action suggestions would you be interested in trying first? What might be some challenges? What are your best hopes?

5-10 minutes -   **Wrap up:** Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out

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Math Tasks: What's in a Task?

- Recognize the characteristics of cognitively demanding tasks
- Examine the research supporting the use of cognitively demanding tasks with all students
- Investigate research-based best practices to support all students in engaging in cognitively demanding math tasks

Schedule:

5 minutes – **Settle in, take attendance, Intro question**: Reflect on a recent task that students were engaged in. How would you evaluate the cognitive load of this task, and what specific factors influenced its level of cognitive demand?

10-15 minutes – **Participants' implementation share-out**

3-5 minutes – **Transition into current module, connection between concepts**: How does the language used impact the cognitive load of a math problem? How do you decide on the language to use in math problems to strike a balance between clarity and cognitive demand?

10-20 minutes – **Workbook reflection**:

1. Were there any prompts in this section of the workbook that you wanted to discuss with the rest of the group? What about them were you looking to explore further?
2. Share examples of math tasks that are routine, in the middle, non-routine? What percent of your tasks that you assign fall into each category? How do you feel about that?
3. What type of math problems would be the appropriate cognitive load for your students? Why? What would it take for them to take on a higher cognitive load?

20-30 minutes – **Application discussion prompts:**

1. How could you incorporate 3 Reads into your math class?
2. What does an ideal math problem look like? Why?
3. What structures do your students need to increase the level of math tasks they are engaging in?

5-10 minutes - **Wrap up:** Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out

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Representations: Opening the Doors to Mathematical Ideas

- Recognize the five categories of mathematical representations
- Explain why all students should have the opportunity to solve using diverse representations
- Examine examples of representations and find mathematical connections between them
- Investigate research-based best practices to support students with representations

Schedule:

5 minutes – **Settle in, take attendance, Intro question**: Which category of mathematical representation do you typically find most comfortable? And which category of mathematical representation do your students generally find most comfortable?

10-15 minutes – **Participants' implementation share-out**

3-5 minutes – **Transition into current module, connection between concepts**: How does the nature of a math task influence the potential for incorporating multiple representations? In what ways do diverse representations of solutions deepen students' understanding of mathematical concepts?

10-20 minutes – **Workbook reflection**:

1. What is the distribution of mathematical representations used in your classroom, and how might you wish to shift them?
2. What are the benefits of using multiple representations for all students?
3. How can you utilize multiple representations to increase the cognitive load?
4. Were there any prompts in this section of the workbook that you wanted to discuss with the rest of the group? What about them were you looking to explore further?

20-30 minutes – **Application discussion prompts:**

1. What structures are necessary to increase the number of representations in your classroom?
2. What are the benefits of students understanding different representations?
3. Choose an upcoming problem and in a group work on how to increase access to different representations.

5-10 minutes - **Wrap up:** Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out

Word Problems: The Problem with Keywords

- Discuss the pitfalls of teaching students to identify keywords in word problems
- Examine strategies for launching a word problem

Schedule:

5 minutes –　　　　　**Settle in, take attendance, Intro question**: What are the key concepts you aim for your students to grasp when solving word/application problems in math?

10-15 minutes –　　　**Participants' implementation share-out**

3-5 minutes –　　　　**Transition into current module, connection between concepts**: How can the concept of representations help students understand the context of word problems?

　　　　　　　　The workbook area for this module is minimal.

25-40 minutes –　　　**Application discussion prompts:**

1. How can we shift the focus from teaching students to merely identify key words in math word problems to fostering a deeper understanding of the problem context and underlying mathematical concepts?
2. Which routines stand out to you as ones you like to use? Why? What would that look like in your upcoming lesson?
3. What can you do to try to use more routines in your classroom? Is there a point where you could use too many routines?
4. In what ways do your current word problem launches help your students gain a robust understanding of the problem context and underlying math concepts?
5. What challenges do your students express with word problems? How could the topics of this module help to address some of those challenges?

5-10 minutes -　　　　**Wrap up:** Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out

Discourse: Look Who's Talking Now

- Examine the role math discourse plays in supporting all students
- Identify how math language routines can be used to increase student voice in the math classroom

Schedule:

5 minutes – **Settle in, take attendance, Intro question**: What skills do students need to productively talk about math in the classroom?

10-15 minutes – **Participants' implementation share-out**

3-5 minutes – **Transition into current module, connection between concepts**: How can word problems provide an opportunity for student discourse?

10-20 minutes – **Workbook reflection (taken from Activity: Math Discourse)**

1. Have you ever developed a better understanding of something by explaining it to others? How does that experience make you think differently about math instruction?
2. Which students in your classroom do you hear from the most? Who do you hear from the least? What could be contributing to this dynamic?
3. What is challenging about getting students talking about math?

20-30 minutes – **Application discussion prompts:**

1. Which routines stand out to you as ones you like to use to increase student discourse? Why? What would that look like in your upcoming lesson?
2. How can we create a classroom culture where students feel comfortable asking questions, challenging ideas, and explaining their mathematical thinking to their peers?
3. What role do open-ended questions and problem-solving activities play in fostering rich mathematical discussions among students?

5-10 minutes - **Wrap up:** Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out.

Questioning: Assessing and Advancing Student Understanding

- Examine the role that assessing and advancing questions play in deepening mathematical understanding
- Apply question stems to write strategic questions

Schedule:

5 minutes –
Settle in, take attendance, Intro question: What are the most common types of questions that you ask in class? Would you classify those as assessing or advancing questions?

10-15 minutes –
Participants' implementation share-out

3-5 minutes –
Transition into current module, connection between concepts: How can we steer the discourse in our classrooms to match the learning objectives of the lesson without inserting ourselves into the middle of the conversation?

10-20 minutes –
Workbook reflection:

1. What was familiar and what was new about the workbook task that asked you to anticipate student approaches, struggles, and misconceptions? What circumstances contribute to the relative challenge of this aspect of lesson planning?
2. What did you notice about how Mr. Ortiz's questions built on the answers Finley provided? What are some ways you plan for follow-up questions in your classroom?
3. Were there any prompts in this section of the workbook that you wanted to discuss with the rest of the group? What about them were you looking to explore further?

20-30 minutes –
Application discussion prompts:

1. What process do you currently use to plan your questions during a math lesson? What advantages and disadvantages have you experienced with that process?
2. How does our choice of math tasks in class influence the extent and types of questioning we can do? Are there patterns in the connection between these choices?
3. Are there benefits to teaching students to question each other? Are there costs? What types of supports could we provide to our students to encourage them to question each other?

5-10 minutes -
Wrap up: Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out

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Expectations: Power of Asset-Based Language

- Examine what the research says about how our expectations influence student achievement
- Discuss how to begin building an asset-based culture in mathematics classrooms

Schedule:

5 minutes – **Settle in, take attendance, Intro question**: How do you provide feedback for your students? How does it focus on both successes and areas for improvement?

10-15 minutes – **Participants' implementation share-out**

3-5 minutes – **Transition into current module, connection between concepts**: How does the introduction to this module reinforce the importance of intentional questioning?

10-20 minutes – **Workbook reflection**:

1. Is your cultural background similar to the majority of your students'? If so, how do you leverage that common cultural sense in your classroom choices? If not, how do you learn about your students' backgrounds and reflect it in the classroom?
2. The activity in part 2 asks you about how approaches to feedback can help build an asset-based culture. What are some other choices we can make in the classroom, and the school overall, that help build such a culture?
3. Were there any prompts in this section of the workbook that you wanted to discuss with the rest of the group? What about them were you looking to explore further?

20-30 minutes – **Application discussion prompts:**

1. In your experience as a student, how did your teachers' expectations influence your academic achievement? Was there a teacher who convinced you that you could do more than you believed? Was there a teacher who underestimated you? What impact did that have?
2. In what ways do you consciously shift your thinking from deficit-based to asset-based? Is there a particular signal or trigger that helps you realize when you are drifting towards a more deficit-based mindset?
3. Have you ever received feedback that has only, or primarily, focused on your shortcomings? How did that make you feel about the person providing the feedback, the topic of the feedback, and your motivation to address the issues?

5-10 minutes - **Wrap up:** Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out

Just-in-Time Supports: Moving Beyond Remediation to Accelerate Learning

- Examine research on how to support learners furthest from opportunity
- Identify what just-in-time supports look like for grade-level content

Schedule:

5 minutes – **Settle in, take attendance, Intro question**: Have you ever started watching a movie or TV show halfway through? Under what circumstances could you catch up and understand what was going on, and what would necessitate you having to stop and start over from the beginning?

10-15 minutes – **Participants' implementation share-out**

3-5 minutes – **Transition into current module, connection between concepts**: Think of a time when you were surprised by a class's lack of prior knowledge concerning a particular topic or concept. What did you do? How did it go? What, if anything, would have been different if you could have better anticipated the difficulty with the prerequisite content?

10-20 minutes – **Workbook reflection**:

1. How often do you unexpectedly need to insert a whole group lesson for prerequisite content? How do you adjust your calendar to accommodate these needs without sacrificing grade level content?
2. The activity in part 2 asks you to determine the prerequisite skills needed for a particular task. How often do you formally list these out for tasks you give in your class? Did anything about the process of formally listing these out surprise you, like the number of necessary skills, the difficulty in explicitly naming them, or how much time it took to list them all out?
3. Were there any prompts in this section of the workbook that you wanted to discuss with the rest of the group? What about them were you looking to explore further?

20-30 minutes – **Application discussion prompts:**

1. What types of out of class support does your school/institution build into its structure to assist students who need more time with prerequisite content? How can the support structures and the classroom ensure that they are on the same page concerning each of the students' needs?
2. How does the culture of your school/institution encourage communication between teachers to share data regarding students' critical knowledge from prior grades? In what ways could this be improved?

5-10 minutes - **Wrap up:** Each individual brainstorms "What can you do between now and our next meeting to incorporate or emphasize this topic more in your classroom?" and a few participants volunteer for the next session's implementation share-out

Putting It All Together

- Begin to create a vision for excellent mathematics instruction for your classroom
- Draft an action plan to help you move closer to your vision

Schedule:

5 minutes – **Settle in, take attendance, Intro question**: What feelings do you have now that you have completed all the modules? Relief? Excitement? Fear? Sadness?

10-15 minutes – **Participants' implementation share-out**

3-5 minutes – **Transition into current module, connection between concepts**: What types of similarities did you notice between our implementation share-outs throughout these discussions? What differences were there? Are there any lessons we can apply to future efforts to incorporate new strategies into our classrooms?

10-20 minutes – **Workbook reflection**:

1. What is one aspect of your vision for an ideal classroom that you feel that you have always incorporated into your own classroom? How were you able to establish that aspect and maintain it?
2. What is one aspect of your vision for an ideal classroom that you would not have included before working through these modules? Why did you incorporate this aspect into your vision? What does it add to the classroom?
3. What is one idea or strategy that we discussed in these modules that you would not include in your vision for an ideal classroom? Why did you choose it?

20-30 minutes – **Application discussion prompts:**

1. Which strategies or ideas from these discussions worked best in your classroom? What conditions contributed to their success?
2. Which strategies or ideas from these discussions did not work well? What conditions contributed to these results? What would you do differently if you were to try it again?
3. What is your lasting take-away from these modules and discussions?

3-5 minutes – **Wrap up of totality of discussions and, if appropriate, establish channels of communication that can endure**

Appendix

Workbook based question ideas:

1. What workbook activity/prompt/questions for this module did you find particularly challenging? Why?
2. Which area of the module do you feel the workbook failed to provide enough space or prompts to allow for an appropriate amount of reflection? What questions or concerns would you like to think about and discuss regarding that area?
3. Which of the resources from the "Want to Explore More?" section looks most appealing to you? Could you commit to exploring it and beginning our next meeting with a summary?
4. Was there a post-assessment question for this module that you found particularly challenging? Explain your thinking regarding the question.

General Application question ideas:

1. What aspects of the topics and examples explored in this module are already present in your current classroom routines? What benefit would there be in emphasizing these aspects even more? Could some of these be scaled back without losing their current benefits?
2. If you currently only touch on these tangentially, if at all, what aspects of the topics and examples explored in this module would be the easiest to apply to your current classroom routines? Which would be the hardest? Explain.
3. Where might the topics from this module be reflected in your current curriculum materials? Where might there be conflict? How might any inconsistencies be reconciled?
4. Which aspects of the concepts from this module would you like to push back against? Are there instances where you have experienced or observed actions in a classroom that might clash with the module's ideas?
5. Pick one of the suggestions from the "Committing to Action" section at the end of the module that you could apply to your practice. What will you need to do to ensure it gets done? Who can you partner with to help you?
6. Do you know a colleague or a national personality that has some expertise in this topic? What would they add to this discussion? If you could ask them one question about this, what would it be?
7. What classroom management actions and steps would be most helpful in optimizing a classroom environment for the strategies from this module?
8. How should the ideas and concepts in this module impact the way students are assessed, both in the classroom and at a larger, standardized level? How might that influence how you approach assessment in your classroom?
9. What barriers currently exist, at the district or building level, that could make the implementing of these concepts more difficult? What conditions could make it easier?
10. Think about a prompt or activity that you have used in the past that goes against the ideas presented in this module. How does it differ?
11. Did you experience any of the ideas or concepts from this module as a student? How did it work for you? What was difficult?