	<p>Module 5: Facilitating Productive Math Discourse</p> <p>Elementary Cohort</p> <p>July, 2019</p>
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SECTION START: 8:30

● **Duration:** 30 seconds

● **Facilitator says:** Welcome to Module 5. We hope you had a good night's rest and look forward to another great day of learning today!

- **Facilitator says:** [presenters reintroduce themselves and share a brief background if necessary].
- **Facilitator does:** Ensure everyone has signed in, has materials for the day, is sitting with his or her learning team, is wearing a name tag and has their name table tent out in front of them.
- Review logistics for training (restrooms, times, breaks, lunch, etc.): our morning break will be at 10:20; lunch will be at 11:45; and afternoon break will be at 1:30.

Mentor Training Course Goals

- Build strong relationships with mentees.
- Diagnose and prioritize mentees' strengths and areas for growth.
- Design and implement a mentoring support plan.
- Assess and deepen mentor content knowledge and content-specific pedagogy.



- **Duration:** 30 seconds
- **Facilitator says:** Let's just take a moment to remind ourselves about the overarching goals of the Mentor Training Course. Today's topics will really focus on that third overall goal, designing and implementing a coaching support plan to develop mentee knowledge and skills.

You said...



- Before I thought ... and now I think...
- The most useful thing from today for my own teaching is...
- The most important thing from today for me to remember about working with my mentee is...

- **Duration:** 5 minutes
- **Facilitator says:** We want to share what you wrote on your exit cards yesterday. These are the highlights of what you said rather than every comment. If you have a question that we have not yet answered, please see us at break or lunch to get some of our thinking.
- **Facilitator does:** read a summary of about 5-8 big ideas for each of the items. Answer questions that are appropriate to answer in the large group.

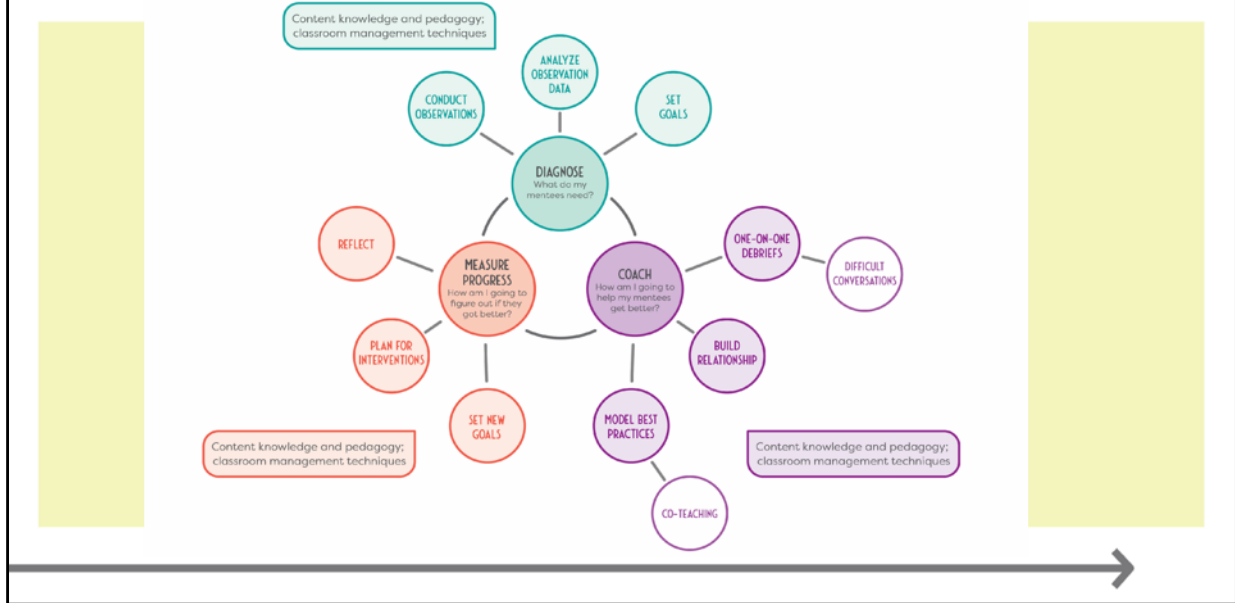
“One Word”



- **Make groups of 5:** Stand up and find 4 other people you haven't worked with very much so far in the course (1 minute)
- **Think Time:** Silently decide on 1 word that describes the practice of mentoring to you so far in the course (1 minute)
- **Share:** Share and explore the variety of words in your small group (3 minutes)
 - What's the meaning of each of the "one words"?
 - What examples and reasons are behind the choice of words?
- **Whiparound the room:** Each person calls out their word one at a time (5 minutes)
- **Discuss in groups:** Why does mentoring feel like this at this point? How might these feelings change once the school year starts? (4 minutes)

- **Duration:** 15 minutes
- **Facilitator says:** Today is the halfway point in your mentoring course, and your final module before the school year and your mentoring practice begins! So we're going to take a few minutes to get to know a few more of your fellow participants and to think a little about what "mentoring" means to you at this point halfway through the course. [Read activity instructions on slide].
- **Facilitator does:** Time keep and move activity along

The Mentoring Cycle



● **Duration:** 30 seconds

● **Facilitator Says:** The mentoring cycle is on page 4 of your handout. Remember, this is the mentor cycle that all of our work is grounded in. The mentor cycle illustrates all of the components of your role as a mentor - the concrete actions you will take when working with your mentees. Today, we'll be zooming in on aspects of Coach and Measure Progress. By the end of the nine Modules we will have worked through all of the components of the cycle.

Module 5 Morning Outcomes

- Learn a model for facilitating productive student discourse in mathematics.

• **Duration:** 30 seconds

• **Facilitator says:** The state of Louisiana has invested significantly in the development of Tier 1 curriculum to ensure all educators have access to high quality curriculum and instructional materials. This investment resulted from compelling research on the impact on students when teachers work with HQ curriculum. We are committed to teachers and students having these materials – particularly our newest teachers and our teachers serving our most vulnerable students. Today’s curriculum focus in on facilitating product student discourse in mathematics. For students to deeply master math, they must engage in product conversations about math in class.

Today's Agenda



- Welcome and outcomes
- Productive mathematical discourse
- Lunch
- Plan for interventions
- Co-teaching best practices
- Connection to assessments
- Prepare for the beginning of the year
- Wrap-up

● **Duration:** 30 seconds

● **Facilitator says:** You will see our agenda on p. 3 of your packet. We will begin with our content focus on productive mathematical discourse, then move into our mentoring focus of planning for interventions and co-teaching best practices. At the end of the day, after you have time to work on the mentoring assessments, you'll have some time to prepare for the beginning of the school year before we wrap up for the day.

Our Working Agreements



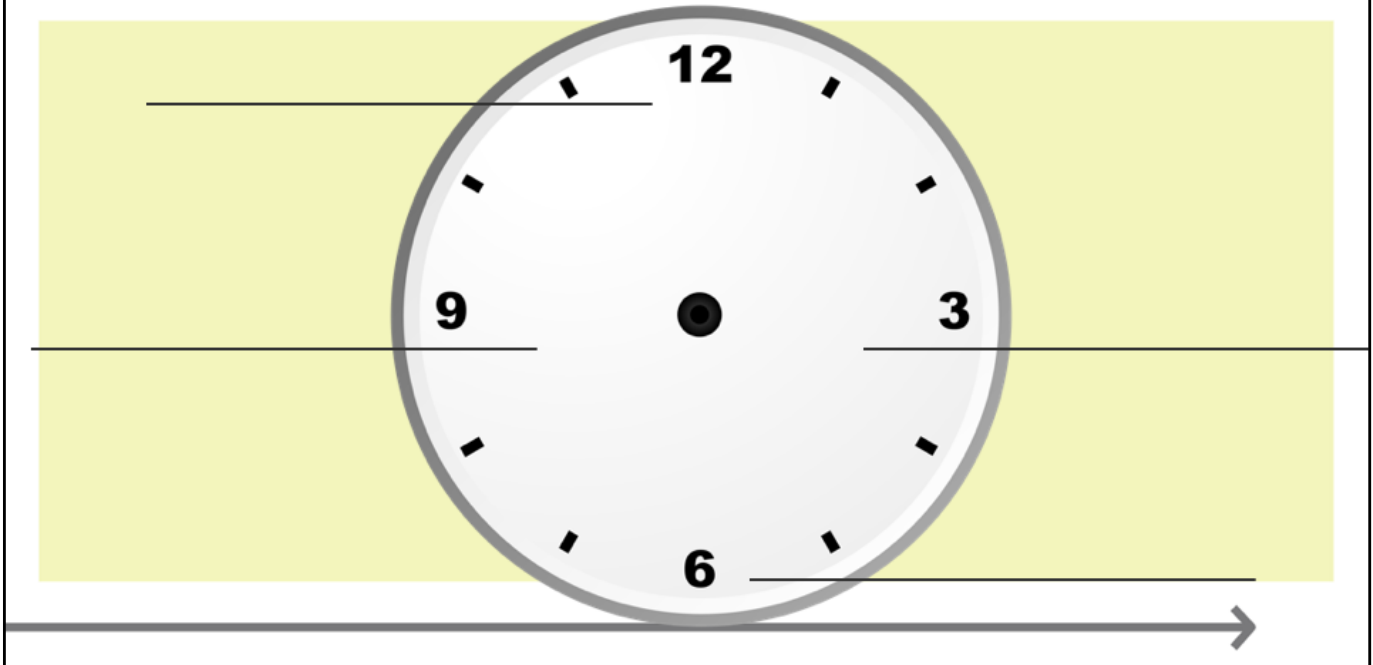
- **M**ake the learning meaningful
- **E**ngage mentally and physically
- **N**otice opportunities to support the learning of others
- **T**ake responsibility for your own learning
- **O**wn the outcomes
- **R**espect the learning environment of self and others

● **Duration:** 3 minutes

● **Facilitator says:** Yesterday your team made a commitment to focus on one agreement. Take 2 minutes to discuss among yourselves how well you kept that commitment. What went well and where did you struggle? Determine if you want to keep the same team commitment or focus somewhere else today.

● **Facilitator does:** Observes team conversations.

Let's Make a Date



- **Duration:** 5 minutes

- **Facilitator says:** Like yesterday, there are going to be different activities throughout today's training during which we want you to have the opportunity to work with people who are not sitting with you at your table. You'll get plenty of time to chat with the people at your table and your shoulder partners, but it will also be nice to get up and move and gain some insights from other colleagues in the room. Therefore we are going to ask that you make 4 new dates for today: a 12 o'clock, 3 o'clock, 6 o'clock and 9 o'clock date with 4 different people from yesterday that are not sitting at your table. When I say go, everyone will stand up and fill out their clocks on page 5 of your handout. You'll add a person's name to each time slot, you may even want to add in a description of what they look like or where they are sitting to help you remember who that person is, just in case. Once you have your whole clock filled out, you may take a seat.

- **Facilitator does:** Allow time for participants to complete their clocks. Help those who are missing certain time slots and can't seem to find someone who also needs that same time slot find a date.



Productive Mathematical Discourse

SECTION START: 9:00

- **Duration:** 1 minute

- **Facilitator says:** We will now dive into our math content for the day: productive mathematical discourse. Remember that your number one job as a mentor is to help your mentees implement their Tier 1 curriculum well. Like we talked about yesterday, there is a growing body of evidence to support the theory that providing teachers with a high-quality curriculum that reflects top-notch content and pedagogy is the fastest way to improve instruction. New teachers, perhaps more than anyone else, can benefit from using a strong curriculum. Even the best curricula can be difficult to implement as intended, especially for new teachers. As a mentor teacher, you play an instrumental role in helping and supporting teachers to implement their curriculum well. In order to do this we need to develop a common language around mathematical practices. Today's focus on mathematical discourse will help us do just that. For students to deeply master math, they must engage in productive conversations about math in class.

As the standards for mathematics have shifted from primarily routine

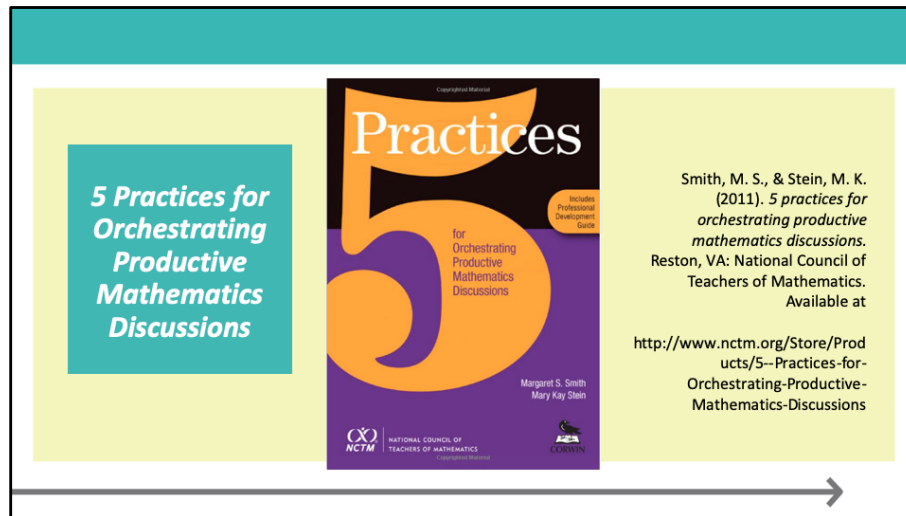
procedures and algorithms to also include building conceptual understanding and applying knowledge, students must be able to reason, justify and model their thinking in mathematics. Achieving this require that teachers also shift their instruction, so that students are doing more of the cognitive lift.

Productive discourse is an instructional tool that facilitates this by allowing teachers to use students' developing thinking to help other master the content. Productive discourse also helps teachers collect important information about what students are thinking and learning that can be used to adjust instruction.

The reality is that we see a dearth of these types of conversations in classrooms and as a mentor, you can help teachers who are using the EngageNY curriculum and other Tier 1 curriculums understand how to recognize each of these practices in order to best meet the intent of each lesson.

Remember, by first strengthening your content and pedagogical skills, you'll then be better prepared to support your mentees and help them build their content and pedagogical skills.

So let's dive into what discourse should look like in a math classroom.

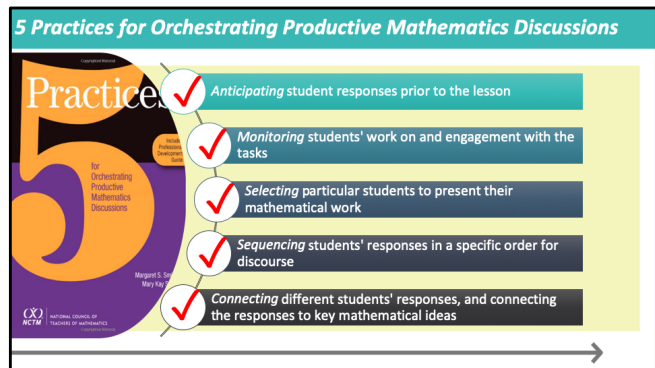


● **Duration:** 1 minute

● **Facilitator says:** To promote productive student discourse in the mathematics classroom, we will examine a 5-practices model as originated by Margaret Smith and Mary Kay Stein. Smith and Stein’s research laid out the framework as a process for using student thinking and student work as the launch pad for rich discussions that get at the heart of important learning. The first iteration of this model was done with mathematics; later, the model was expanded to also address science discourse. We will use this resource as the foundation of our learning today. We’ll be doing an overview of the model for facilitating mathematics discourse described in the National Council of Teachers of Mathematics book *5 Practices for Orchestrating Productive Mathematics Discussions*.

● **Words of Wisdom:** The “5-practices model” is very rich; participants can become overwhelmed, so strive to keep the overview of the 5 practices brief.

● **Citation:** Smith, M. S., & Stein, M. K. (2011). *5 Practices for Orchestrating Productive Mathematics Discussions*. Reston, VA: National Council of Teachers of Mathematics. Available at <http://www.nctm.org/Store/Products/5--Practices-for-Orchestrating-Productive-Mathematics-Discussions>



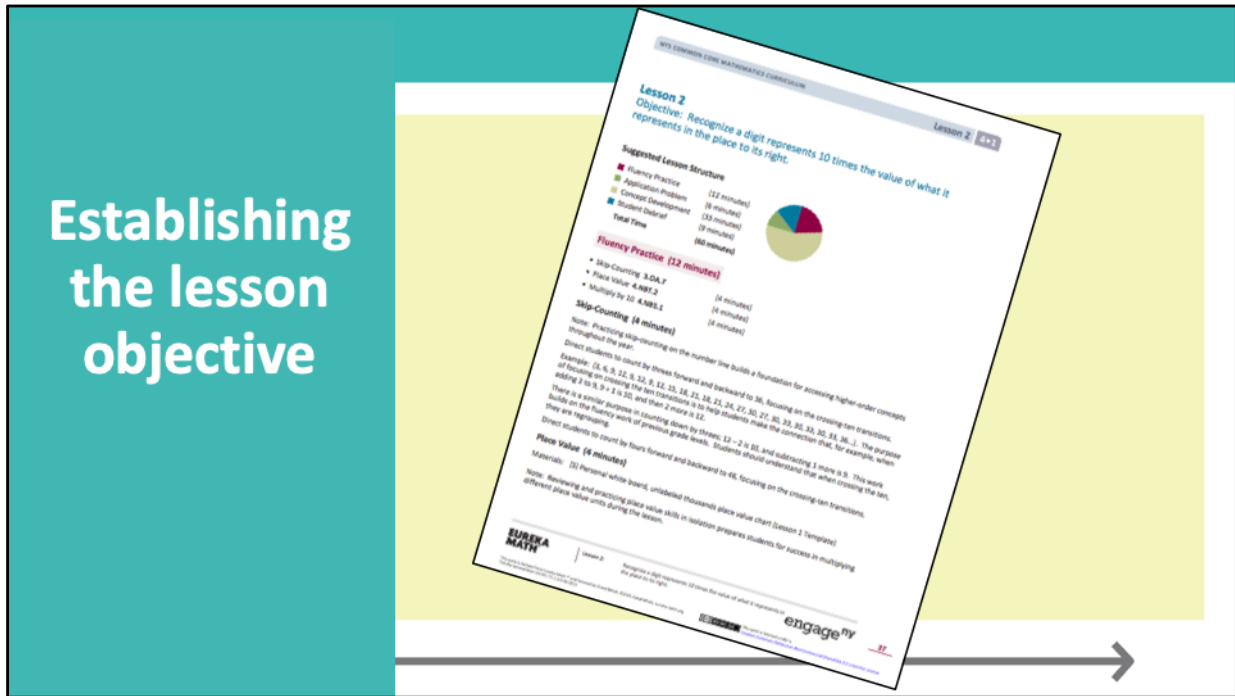
●**Duration:** 3 minutes

●**Facilitator does:** Animate the slide for each step.

●**Facilitator says:** This visual is an overview of the ‘5 practices model’ for orchestrating productive mathematics discussions. It appears on p. 6. The ‘5 practices model’ is a process of planning and instruction that teachers can implement for promoting productive discussions in classrooms. The EngageNY curriculum resource and other Tier 1 curriculums use these 5 practices in many lessons. One note - while EngageNY and other Tier 1 curriculums do make use of many of these practices, they don’t call any of them out specifically. And so teachers often underestimate their importance, which leads them to deviate from the design of the lesson (skip, alter, etc.), especially when students struggle or teachers feel behind on pacing.

By taking the time to understand the model fully, you should be able to better implement the EngageNY curriculum to its fullest intent and better support your mentees understand how to recognize each of these practices in order to best meet the intent of the lesson. Remember that this visual is an overview of the ‘5 practices model’ for orchestrating productive mathematics discussions. This process depends on the foundation of establishing a clear learning goal for discussions, which often EngageNY does for you. The first practice, **Anticipating student responses** to a challenging task, is part of the planning that occurs BEFORE students engage in the mathematics task. The second practice, **Monitoring student work** during engagement with the task, happens while students are working on the task, either individually, in pairs, or in small groups. The third practice, **Selecting particular student work** samples (or students, or groups of students, to present their mathematical work), happens after students have completed the task. The fourth practice, **Sequencing student work** in a specific order for discussion, also happens after students have completed the task. The fifth and final practice, **Connecting student work samples** to each other and to the key learning goal (connecting different students’ responses, and connecting the responses to key mathematical ideas), happens after a sequence is determined.

Establishing the lesson objective

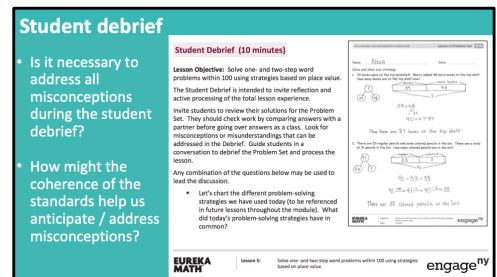


● **Duration:** 10 minutes

● **Critical Idea:** Establishing a clear standards-aligned learning goal is foundational to using the “5 practices model” for orchestrating productive mathematical discussions.

● **Facilitator says:** Before you use student work in a math discussion, you need to ensure that you are connecting the student responses back to the intended goal of the lesson as much as possible. Establishing a clear understanding of the lesson objective prior to beginning the lesson can ensure that teachers, as well as students, stay focused on what really matters and on what students need to learn during discussions. The lesson objective should drive the lesson and serve as the focus of student discussions. Turn to **Lesson 2: Recognize a digit represents 10 times the value of what it represents in the place to its right** on p. 7. (Grade 4, Module 1, Topic A, Lesson 2 - <https://www.engageny.org/resource/grade-4-mathematics-module-1-topic-lesson-2>) Look at the Lesson Objective at the top of the first page. The lesson objective lays the framework for the lesson. Let’s look at the Concept Development section of the lesson and see if we can determine how the lesson objective is achieved in the lesson. Note that locating in advance some possible ‘Hot Spots’ in the lesson—things that could hinder you and your students in achieving the lesson objective—will be very useful to you when you facilitate your students’ mathematical discourse.

● **Facilitator does:** Allow 3 to 5 minutes for the participants to look through the Concept Development section of the lesson. Invite a few responses from participants to share the goal/objective of the lesson with the whole group.



● **Duration:** 12 minutes

● **Critical Idea:** Facilitating a student discussion of the math enables students to grow their math understanding. The ways in which teachers respond to student efforts, including mistakes, is critical in helping students move toward achieving the learning goal.

● **Facilitator says:** For this activity about student debrief, you’re going to work with your 12:00 partner. Please take 1 minute to get up and move to sit with your 12:00 partner. Make sure you bring your packet and something to write with. [Provide 1 minute for participants to move and get settled].

● When facilitating a math discussion in the classroom, you don’t just want to have discussions willy-nilly. It’s important that you select a pivotal point in the lesson where discourse would help students achieve the learning goal/objective of the lesson. If your school is using EngageNY, there is one portion of the lessons that most lends itself to student discourse: the Student Debrief. This is the section of EngageNY lessons you’ll want to focus your time with the 5 Practices on. In your EngageNY lesson handout, locate the Student Debrief section on p. 13. Read this section and have a quick discussion about what you notice about Student DebrieFs.

● **Facilitator does:** Allow 3 to 5 minutes for participants to read and discuss the section. Ask some participants to share with the whole group what they notice that relates to anticipating student responses.

- Possible responses (if these do not surface on their own, point them out to the group):
- *The Student Debrief section specifically calls out using this section to look for student misconceptions.*
- *Probing questions—additional extending questions—are provided for each of the Student Debrief questions, to help surface and address student misconceptions.*

● **Facilitator does:** Animate the questions.

● **Facilitator says:** I would like for you to take a minute and consider these questions with regard to student misconceptions. Take a few minutes to discuss them with your partner.

● **Facilitator does:** Allow no more than 5 minutes for participants to discuss; then have some share their thoughts with the whole group.

- Possible responses:
- Is it necessary to address all misconceptions during the student debrief?
 - *No, there may be strategies coming up in future lessons that will help students*

with their misconceptions.

○How might the coherence of the standards help us to anticipate/address misconceptions?

■ *We can use the Coherence Map/Remediation Guides to identify prerequisite standards from previous grade levels or within our own grade level that will help us fill in gaps in student learning.*

● **Facilitator says:** The EngageNY resource makes use of many of the 5 Practices for Productive Mathematical Discourse even though the practices themselves are not specifically called out. Now we will explore the Practices with this EngageNY lesson to prepare us to be able to make more intentional instructional decisions when we recognize that there is an opportunity for student mathematical discourse.

● **Facilitator does:** Ask participants to thank their partners and return to their seats.

Anticipating Student Responses

Anticipating student responses prior to the lesson

What does this involve?	How is this supported?
<ul style="list-style-type: none">• The strategies that students might use to approach or solve a challenging mathematical task• How to respond to what students produce• Which strategies are most useful in addressing the mathematics to be learned	<ul style="list-style-type: none">• Solving the problem in as many ways as possible• Solving the problem with other teachers• Drawing on relevant research when possible• Documenting student responses year to year

— Adapted from Smith, M. S., & Stein, M. K. (2011). *5 practices for orchestrating productive mathematics discussions*. Reston, VA: National Council of Teachers of Mathematics. Available at <http://www.nctm.org/Store/Products/5-Practices-for-Orchestrating-Productive-Mathematics-Discussions>

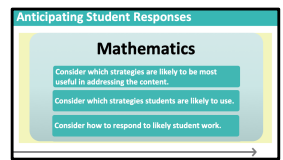
● **Duration:** 5 minutes

● **Critical Idea:** The practice of *anticipating* is critical because it sets the teacher up to understand the math students are working on and the way it can be tackled.

● **Facilitator says:** Take a quick minute or two to review the slide and share your understanding of the process of **Anticipating** with those at your table.

● **Facilitator does:** Give participants a couple of minutes to talk with those in their groups, share the following with them:

● **Facilitator says:** The first practice is Anticipating Student Responses. This happens before you or your mentee even teach the lesson and facilitate a math discussion, and involves you responding to the problems in the lesson yourself and considering how students may respond so that you are ready to support misunderstandings, push their thinking, and make connections across different responses. After you understand the objective for the lesson you're teaching, but before you have students engage in the lesson and tackle and then discuss problems, it's important that you take the time to anticipate how students may respond to the math tasks and problems at hand. In this way, you'll be ready to facilitate their understanding of the math.



- **Duration:** 5 minutes

- **Critical Idea:** Continue to use the fourth grade EngageNY lesson to give participants a context for each of these 3 considerations for anticipating student responses. The last (third) box here is crucial for effectively anticipating student responses, because the ways in which teachers respond to student efforts, including mistakes, is critical to moving students toward achieving the learning goal.

- **Facilitator does:** Animate box 1 only.

- **Facilitator says:** When anticipating student responses it is important to give consideration to three important aspects of anticipating how students might interact with the task. First, consider which strategies are likely to be **most useful** to students: In mathematics, when teachers consider the most useful strategies that students are likely to use, teachers are able to predict the challenges that students might face and what can be done about these challenges. Understanding which strategies students have had the most success using makes it possible for teachers to make judgments about student progress while students are still working.

- **Facilitator does:** Animate box 2 only.

- **Facilitator says:** Next, teachers will need to consider what strategies students are **likely to use** in approaching an instructional task. Here, the challenge is to think of multiple ways students might approach the task. Thinking of multiple student approaches requires that teachers engage in the task or activity themselves to consider different ways it could be approached or interpreted. Teachers should consider the various representations that students might use in answering questions, as well as the common errors that students might make. Teachers should also consider

- how students might interpret a problem;
- the strategies students might use, both correct or incorrect; and
- how student strategies might relate to the learning goal(s) established.

- **Facilitator does:** Animate box 3 only.

- **Facilitator says:** Lastly, teachers will need to consider how they will **respond to likely student work**—that is, to the strategies that students choose and the answers they generate. By taking into consideration how students might work through a problem, teachers can begin to generate questions or select questions from the lesson that can be used to help students deepen their thinking. This pre-planning reduces the amount of time that teachers will need to spend reacting in the moment. It is a tendency for a teacher who is unprepared for a strategy used by a student to want to jump in and ‘rescue’ the student by redirecting them to a preferred strategy. This response is to be avoided if at all possible. We never want to stifle student thinking. We should instead make an effort to probe the student’s thinking with questions that can help the teacher—and possibly the student—to make sense of the strategy they chose.

- **Words of Wisdom:** **Anticipating** requires teachers to engage in the task or activity themselves

before using it with students—and to consider different ways it could be approached or interpreted.

Practice: Anticipating Student Responses

Mathematics

- Consider which strategies are likely to be most useful in addressing the content.
- Consider which strategies students are likely to use.
- Consider how to respond to likely student work.

●**Duration:** 25 minutes

●**Facilitator says:** So let’s try out anticipating student responses. There are two problems in this lesson that I would like you to examine: **questions 1 and 2 in the Exit Ticket on page 19.**

- Fill in the blank to make a true number sentence. Use standard form.
 - $(4 \text{ ten thousands } 6 \text{ hundreds}) \times 10 = \underline{\hspace{2cm}}$
 - $(8 \text{ thousands } 2 \text{ tens}) \div 10 = \underline{\hspace{2cm}}$
- The Carson family saved up \$39,580 for a new home. The cost of their dream home is 10 times as much as they have saved. How much does their dream home cost?

●Use your handout on page 25 to make notes. First, work on the two problems independently. Then, share your method for solving the problems and have a discussion at your table group using the information provided in the lesson about how you anticipate your students may respond to these questions. Remember to look back through the teacher guidance in the lesson plan and consider:

- Which strategies the lesson identifies that might be useful - which strategies are used to solve the problems that are given in the lesson? Which ones are most useful in addressing the content and objective of the lesson?
- Which strategies you anticipate your students may use (even if the strategies are not in the lesson)? It is important to note that the strategies we anticipate students will use may or may not reflect the strategies called out in the EngageNY lesson. This will depend on the level of instruction done around these strategies and the expectations set forth by the teacher on whether or not to use them. We need to be prepared for strategies outside the ones mentioned in the lesson.
- What misconceptions your students might have.
- And, finally, how you will respond with probing questions to each of these strategies/misconceptions.

You will have 20 minutes to discuss these two questions. You should be ready to share out some of your conversations when I call you back to the whole group. You can note any additional thoughts you have about anticipating student work on page 26 of your handout.

● **Facilitator does:** Allow 20 minutes for participants to work through the handout and discuss anticipated responses to the questions. When time is up, ask for several to share their responses with the whole group.

Monitoring Students' Work

Monitoring students' work on, and engagement with, the task

What does this involve?	How is this supported?
<ul style="list-style-type: none">• Circulating while students work, watching and listening• Recording interpretations, strategies, and points of confusion• Asking probing questions to get students back "on track" or to advance their understanding	<ul style="list-style-type: none">• <i>Anticipating</i> student responses beforehand• Using a recording tool• Observing students' actual responses during independent work

— Adapted from Smith, M. S., & Stein, M. K. (2011). *5 practices for orchestrating productive mathematics discussions*. Reston, VA: National Council of Teachers of Mathematics. Available at <http://www.nctm.org/Store/Products/5-Practices-for-Orchestrating-Productive-Mathematics-Discussions>

● **Duration:** 5 minutes

● **Critical Idea:** The practice of *monitoring* is critical because it ensures that the teacher has her finger on the pulse of how the students are approaching the work, which will prepare her to select students' work to discuss.

● **Facilitator says:** Take a quick minute or two to review the slide and share your understanding of the process of **Monitoring** with those at your table.

● **Facilitator does:** Give participants a couple of minutes to talk with those in their groups, share the following with them:

● **Facilitator says:** The second process, *monitoring students' work on, and engagement with, the task* happens during the work time of the math lesson, when students have been released to work independently, in partners, or in small groups, on the math work in the lesson. In EngageNY, this portion of the lesson is called the problem set. Teachers set themselves up for success with monitoring when you anticipate what you'll see ahead of time. When you start doing this, you can begin by

looking for 3 or 4 specific strategies. The purpose of monitoring students' work during work time is NOT to help every student "finish" the problem(s) correctly. This is a common misconception, and often teachers believe that they have to do this for a lesson to be successful. The point of monitoring students' work is instead to see how students are approaching the work - including misconceptions to address during future lessons or during other portions of the math lesson, such as during the student debrief.

Most Tier 1 curriculums, such as EngageNY, provide probing questions teachers can use to craft questions that are appropriate for their students' needs.

It's important that teachers find a recording tool that works for them. Some teachers like to use checklists, others take notes on what they see with each student. Find a system that allows you to quickly record what students are doing.

Selecting Students to Present Work

Selecting particular students, or groups of students, to present their mathematical work

What does this involve?	How is this supported?
<ul style="list-style-type: none">• Choosing students to present because of the mathematics in their responses• Making sure that over time all students are seen as authors of mathematical ideas and have the opportunity to demonstrate competence• Gaining some control over the content of the discussion	<ul style="list-style-type: none">• <i>Anticipating</i> and <i>monitoring</i>• Planning in advance which types of responses to select, perhaps considering an incorrect solution to illustrate a typical misconception• Being ready to consider unanticipated solutions

— Adapted from Smith, M. S., & Stein, M. K. (2011). *5 practices for orchestrating productive mathematics discussions*. Reston, VA: National Council of Teachers of Mathematics. Available at <http://www.nctm.org/Store/Products/5-Practices-for-Orchestrating-Productive-Mathematics-Discussions>

● **Duration:** 5 minutes

● **Critical Idea:** The practice of *selecting* is critical because it gives the teacher control over what the whole class will discuss ensuring that the mathematics is at the heart of the lesson.

● **Facilitator says:** Take a quick minute or two to review the slide and share your understanding of the process of **Selecting** with those at your table.

● **Facilitator does:** Give participants a couple of minutes to talk with those in their groups, share the following with them:

● **Facilitator says:** The third process, *selecting particular students, or groups of students, to present their mathematical work*, happens after students have completed the task. *Selecting* is supported by anticipating possible responses, both correct and incorrect, before, and by monitoring students as they work on the task. This process involves reflection on the part of the teacher. When selecting students to present their work, the teacher must think about what was observed during the task, what strategies— both correct and incorrect—that individuals or groups used to complete the task, and what insights students might be able to share. Teachers must also recognize that over time, ALL students, including special needs students, should

have opportunities to share their thinking and demonstrate competence so that all students are seen as authors of mathematical ideas.

Sequencing Work to Support Discourse

Sequencing students' responses in a specific order for discussion

What does this involve?	How is this supported?
<ul style="list-style-type: none">• Purposefully ordering presentations so the mathematics is accessible to all students• Building a mathematically coherent storyline from prior knowledge to current grade-level standards.	<ul style="list-style-type: none">• <i>Anticipating, monitoring, and selecting</i>• During anticipation of work, considering how possible student responses are mathematically related

— Adapted from Smith, M. S., & Stein, M. K. (2011). *5 practices for orchestrating productive mathematics discussions*. Reston, VA: National Council of Teachers of Mathematics. Available at <http://www.nctm.org/Store/Products/5--Practices-for-Orchestrating-Productive-Mathematics-Discussions>

● **Duration:** 5 minutes

● **Critical Idea:** The key to *sequencing* is to order student work in a way that makes the mathematics accessible to all students and to build a mathematically coherent storyline.

● **Facilitator says:** Take a quick minute or two to review the slide and share your understanding of the process of **Sequencing** with those at your table.

● **Facilitator does:** Give participants a couple of minutes to talk with those in their groups.

● **Facilitator says:** The fourth process, *sequencing students' responses in a specific order for discussion*, also happens after students have completed the task. Sequencing is supported by anticipating possible responses beforehand, monitoring students as they work on the task, and taking time to reflect on students' work in order to select those who will present their work to the class. This process also involves reflection on the part of the teacher. When selecting students to present their work, the teacher must think about how to order student presentations so that a coherent 'storyline' is created, which will make the mathematics accessible to all students and will build students' understanding of the mathematics.

Sequencing Work to Support Discourse

Ways to Sequence

- Begin with the strategy used by the majority of students before moving to those strategies that only a few students used.
- Begin with a strategy that is more concrete, then move to strategies that are more abstract.
- Present strategies that address common misconceptions.
- Have related or contrasting strategies presented one right after the other.

● **Duration:** 5 minutes

● **Critical Idea:** Sequencing students' responses for discussion is a critical step in developing student understanding of the mathematics. There are a number of ways teachers can sequence students' responses.

● **Facilitator says:** There are a number of ways in which we can sequence the presentation of student work.

● **Facilitator does:** Give them a minute or two to read the information on the slide, then provide clarification, if needed.

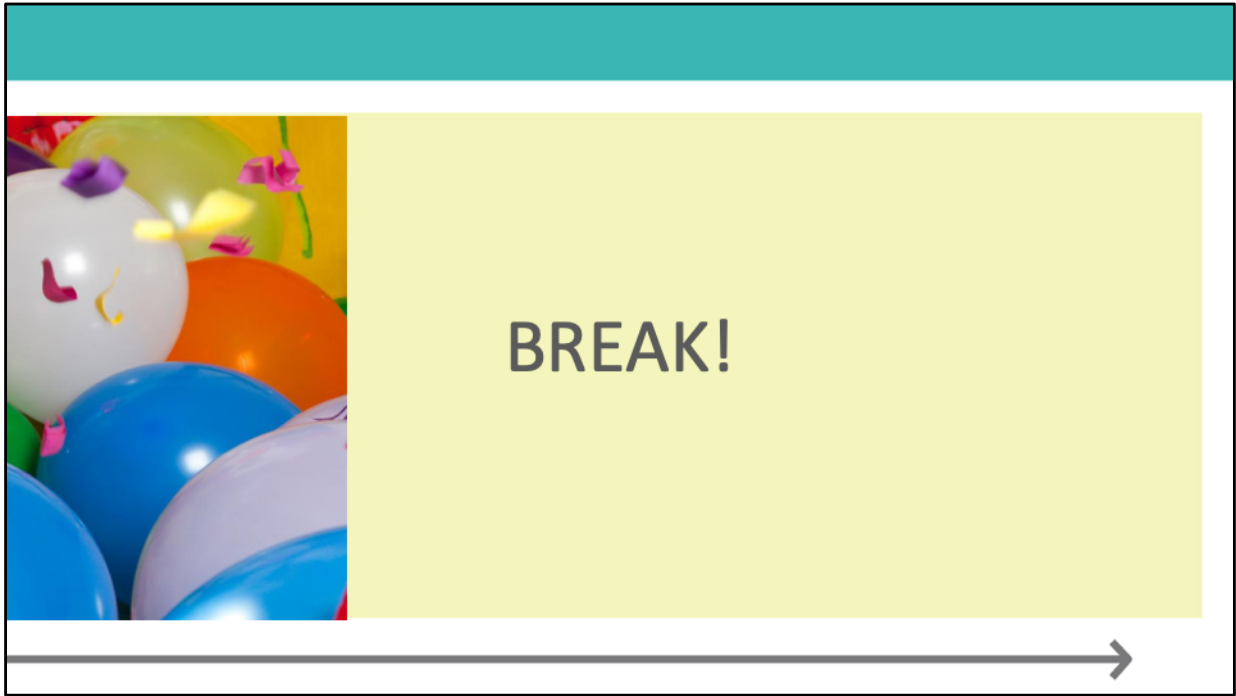
○ "The way in which responses are sequenced will depend on a number of factors, such as:

- The learning objective for students,
- The mathematics involved, and
- Students' current level of understanding."

- **Facilitator says:** After break, you will have a chance to practice what we just learned.

● **Words of Wisdom:** This slide is important. Clarify that one approach to sequencing solutions is by presenting the most commonly used strategy first. However, it may

not always be the best approach to sequencing student responses.



SECTION START: 10:20

●15 minutes

Practice: Selecting and Sequencing

With your group, analyze the student work samples for strategies and misconceptions and compare to the strategies you anticipated, then...

- **Select** student work that would best represent the strategies that would help build understanding of the math.
- **Sequence** the selected student work in the order that your group determines would best help the students make sense of the math.
- Create a chart that illustrates your selected strategies in the sequence you would have discussed them with students in your class to help students make sense of the math. Tape the student work to the chart paper in a way that you think supports student learning.

SECTION START: 10:35

●**Duration:** 20 minutes

●**Critical Idea:** Participants will apply their knowledge of the “5 practices” to select and sequence student responses to a math task.

●**Facilitator says:** Before our break, we learned about the first 4 practices. Now you’re going to practice.

●**Facilitator does:** Hand out a set of student work, a sheet of chart paper, a length of tape, and several markers to each group.

●**Facilitator says:** Each page of student work has a different student’s response to the task. As a group, you are going to analyze the student work and look for strategies, misconceptions, and different levels of understanding. These samples are taken from students who completed the exit ticket from the lesson we experienced earlier (Grade 4, Module 1, Topic, A, Lesson 2). Each sample represents the final work for a student. You are going to take on the role of the teacher and work with your group to analyze the student work for strategies and misconceptions. **Animate the slide.**

Then, your group will select the student work that you feel would best represent the strategies that would help build understanding of the math. **Animate the slide.**

You will also **Sequence** the selected student work in the order that your group determines would best help the students make sense of the math. **Animate the slide.**

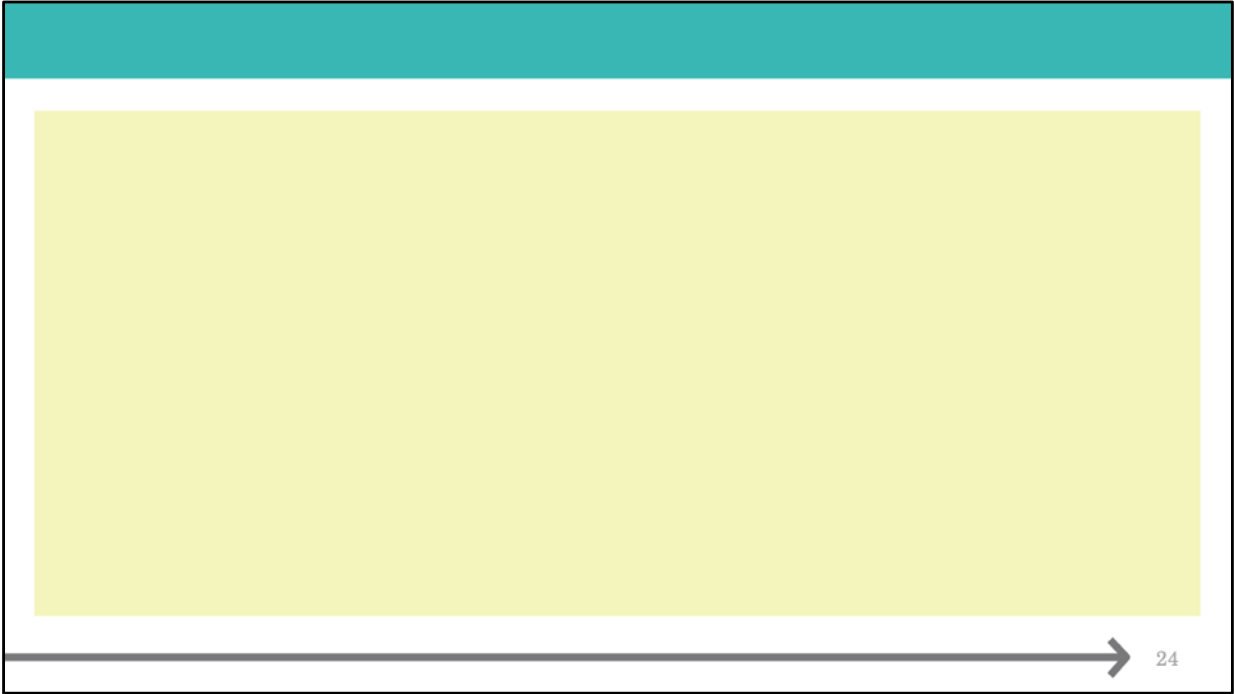
You will then work with your group to create a chart that illustrates your selected strategies in the sequence you would have them presented in your class to help students make sense of the math. You will tape the student work cards onto the chart paper in an order that you think would support student understanding.

Remember, as you look at these samples, it is not about only showcasing the correct answers or successful strategies. Sometimes it is just as meaningful to students’ understanding to look at strategies that didn’t work. There is not one correct way to sequence these strategies—just be ready to explain why your group chose to sequence them the way that you did and how that sequencing will help with student understanding. You can make any notes you have

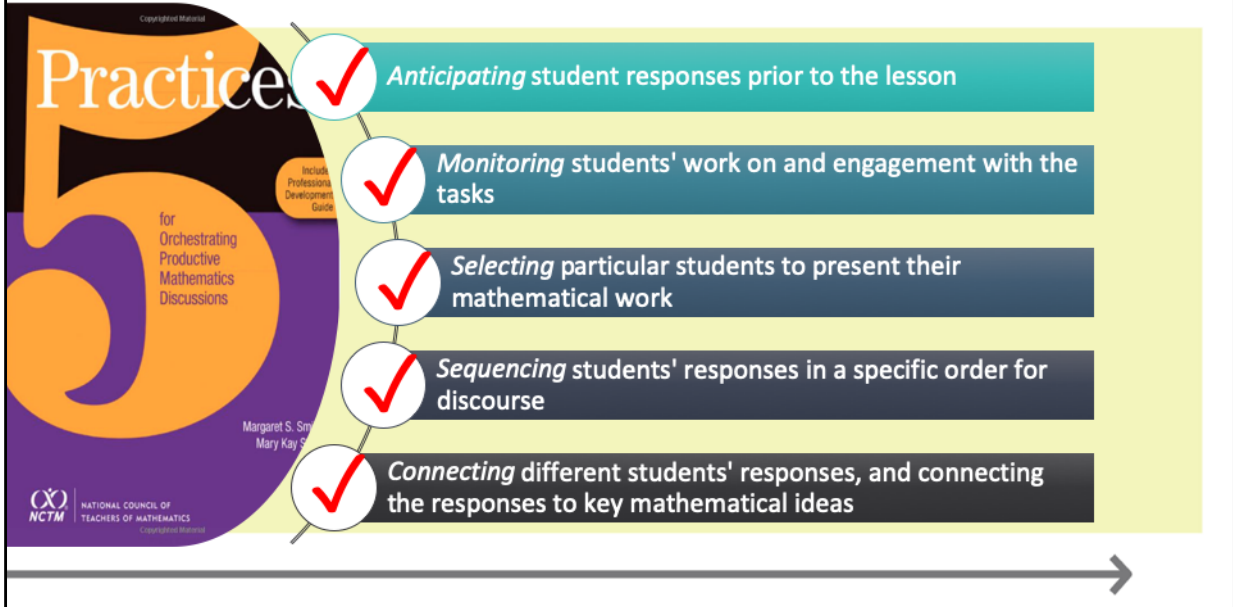
about selecting and sequencing while working on this activity on page 26 of your handout.

● **Facilitator does:** Give groups time to **Select** and **Sequence** student work as they plan for mathematical discourse. Have groups hang their charted strategies as they finish. If there is time, have participants share some of their thinking for their charts with the whole group. If running behind on time, groups can also do a gallery walk to see how others decided to select and sequence the student work.

● **Words of Wisdom:** Remember that these are the 3rd and 4th steps in the process of facilitating meaningful mathematical discourse. Before completing these steps, you would have anticipated student responses and monitored students as they worked, asking probing questions as you monitored. After you have selected the student work to discuss and determined the sequence to discuss them, you're ready to facilitate the discourse discussion, during which you'll connect student responses. We'll focus on that last practice after the break.



5 Practices for Orchestrating Productive Mathematics Discussions



● **Duration:** 1 minute

● **Facilitator says:** Now, we are going to look at the last practice, **Connecting student work samples** to each other and to the key learning goal (connecting different students' responses, and connecting the responses to key mathematical ideas). This practice happens during the math discourse (remember, in an EngageNY lesson, that's called the Student Debrief).

Connecting Responses and Key Idea

Connecting different students' responses, and
connecting the responses to key mathematical ideas

What does this involve?	How is this supported?
<ul style="list-style-type: none">• Encouraging students to make mathematical connections between different student responses through questioning• Making the key mathematical ideas that are the focus of the lesson salient• Considering extensions as they come from the students or the teacher	<ul style="list-style-type: none">• <i>Anticipating, monitoring, selecting, and sequencing</i>• Considering how students might be prompted to recognize mathematical relationships between responses• Cultivating a classroom culture with explicit supports for student discourse

— Adapted from Smith, M. S., & Stein, M. K. (2011). *5 practices for orchestrating productive mathematics discussions*. Reston, VA: National Council of Teachers of Mathematics. Available at <http://www.nctm.org/Store/Products/5-Practices-for-Orchestrating-Productive-Mathematics-Discussions>

26

● **Duration:** 5 minutes

● **Critical Idea:** *Connecting* students' responses requires the teacher to craft questions or select questions from your Tier 1 curriculum resource that will make the mathematics visible and understandable. Questions must go beyond clarifying and probing, and must focus on mathematical meaning and relationships and make connections between mathematical ideas and representations.

● **Facilitator says:** Take a quick minute or two to review the slide and share your understanding of the process of **Connecting** with those at your table.

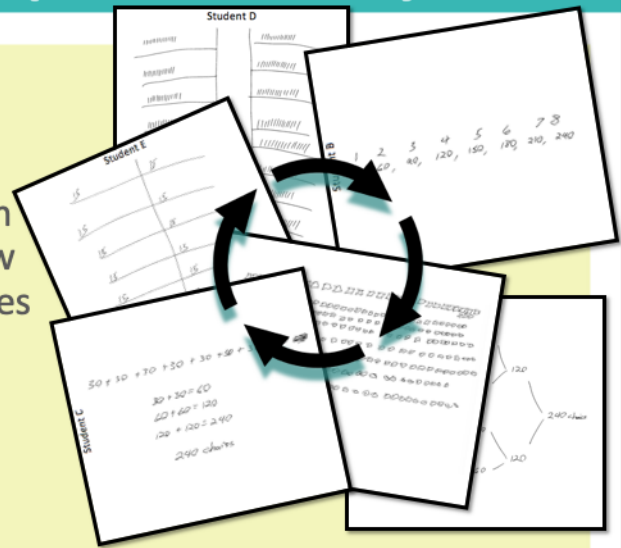
● **Facilitator does:** Give participants a couple of minutes to talk with those in their groups.

● **Facilitator says:** The fifth and final process, connecting different students' responses, and connecting the responses to key mathematical ideas, happens after a sequence is determined. Connecting is supported by the other four processes — anticipating, monitoring, selecting, and sequencing — because the way you choose to connect students' ideas to one another and to key mathematical ideas will depend upon the observations and decisions you make when implementing the other four processes. Like other processes in this framework, this process also involves reflection and planning on the part of the teacher. During the connecting process, the teachers must think about

how to keep the key mathematical ideas as the focus of the lesson, as well as how to use questions to help students make mathematical connections between the different responses that are presented. Teachers should also consider possible extensions that may surface during the discussion.

Practice: Connecting Responses and Key Idea

Write notes to describe how you would make connections between the students' strategies—and how you would connect these strategies to the learning goal.



● **Duration:** 25 minutes

● **Critical Idea:** *Connecting* students' responses requires the teacher to craft questions or select questions from the Tier 1 curriculum that will make the mathematics visible and understandable. Questions must go beyond clarifying and probing, and must focus on mathematical meaning and relationships and make connections between mathematical ideas and representations.

● **Facilitator Says:** In order to practice the connecting process, we are going to use the student work you selected and sequenced before the break and look for possible connections we can make. The connecting process involves making connections between student responses and also connecting those responses to the intended mathematical learning,

You will go back to your charts from before the break where you've sequenced the student work from Grade 4, Module 1, Topic A, Lesson 2. Now, you will write to describe how you would make connections between the students' strategies and how you would connect them to the learning goal. You will have about 20 minutes to work on this, please hang your chart back up when your group is finished. You can note any thoughts you have while you work on page 27 of your handout.

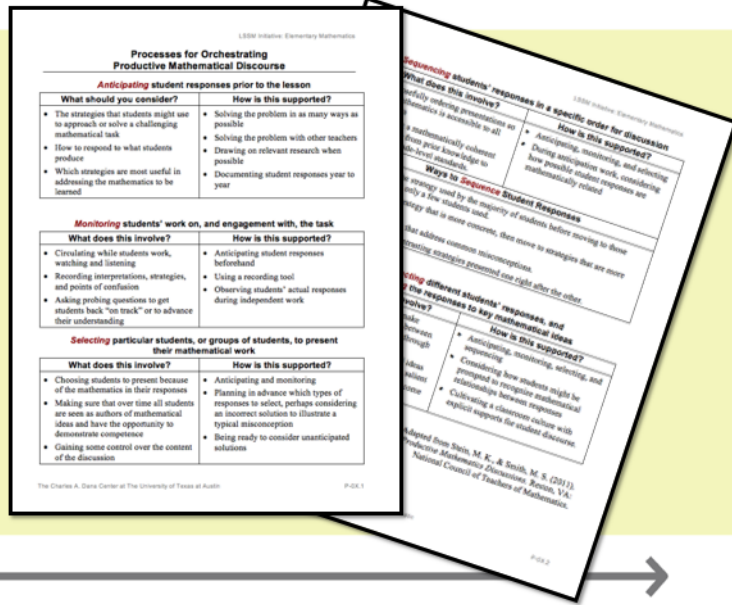
● **Facilitator does:** Give the groups 20 minutes to complete their charts. Debrief the activity by either highlighting some unique connections you noticed on the various charts or by asking participants to share out any "ah-has" they may have had while completing

the activity.

- **Words of Wisdom:** Walk around while groups are completing their charts and look for groups that may be making some unique connections that others may not have thought of.

Orchestrating Productive Mathematics Discussions

Read the document to review the discourse process.



● **Duration:** 10 minutes

● **Facilitator says:** Now to finish, I would like to take some time to review the practices. The charts on pages 23-24 highlight all 5 practices for orchestrating productive mathematical discourse'. Take a couple of minutes to read through the 5 practices and think about how this process will affect teaching and learning in your classroom and your mentor practices. Feel free to make notes.

Mathematics Teacher Preparation Competencies

Work with your 3:00 partner:

- Examine the Mathematics Teacher Preparation Competencies (pp. 11-12) and note alignment between the competencies and mathematical discourse
- Where in the competencies is facilitating productive math discourse evident?
- Be ready to explain.

- **Duration:** 15 minutes
- **Facilitator says:** Pull out your Teacher Preparation Competencies document. In just a moment, I'm going to ask you to stand up with your Competencies and a writing utensil and meet up with your 3:00 partner. Together, you will examine the Mathematics Content Knowledge and Content-specific Pedagogy competencies in mathematics on pp. 11-12. Your task is to identify specific competency areas where facilitating productive math discourse is evident.
- **Facilitator does:** Give participants time to review the math competencies. Then solicit sharing from participants.

Reflection Questions

Take a few minutes to think about and answer the following questions:

- What strategies can you use to ensure that **ALL** students engage in mathematical discourse in your classroom?
- What can you do to leverage incorrect or incomplete reasoning or solutions to strengthen the learning of all students?
- Based on your learning for this section, what action step(s) might you take in order to foster a safe and positive environment for student discourse in your classroom?
- How can you apply your understanding of productive math discourse to facilitate your mentee's growth?

30

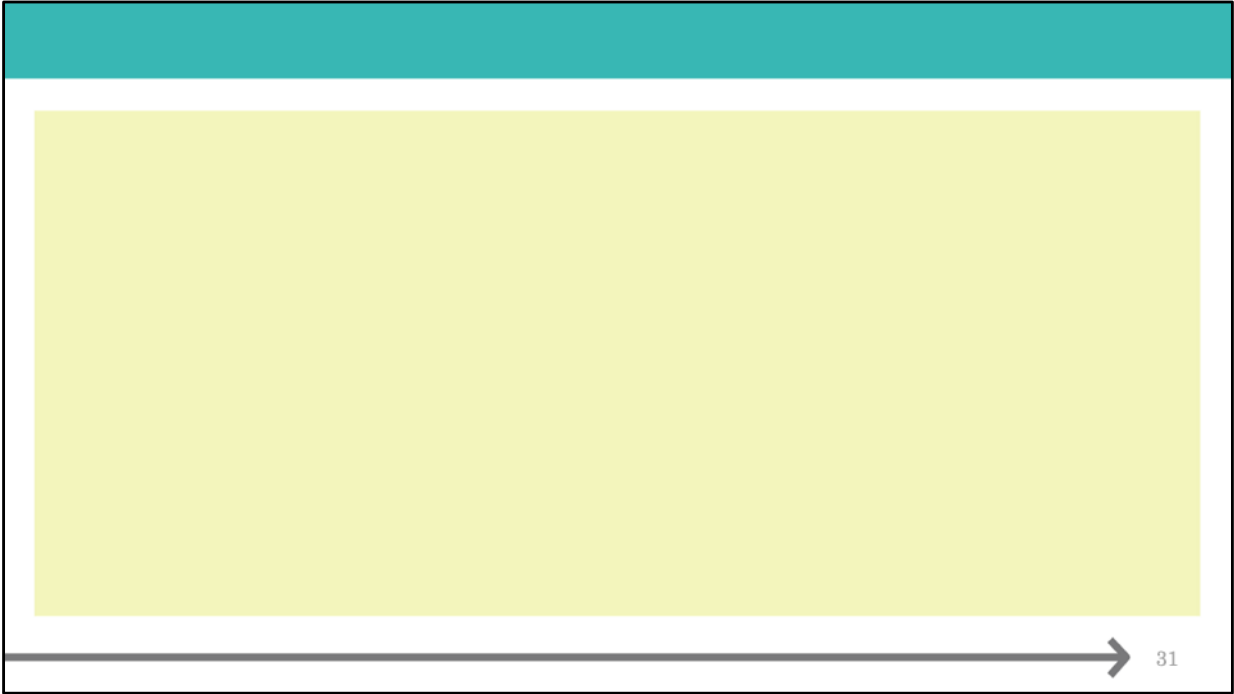
● **Duration:** 8 minutes

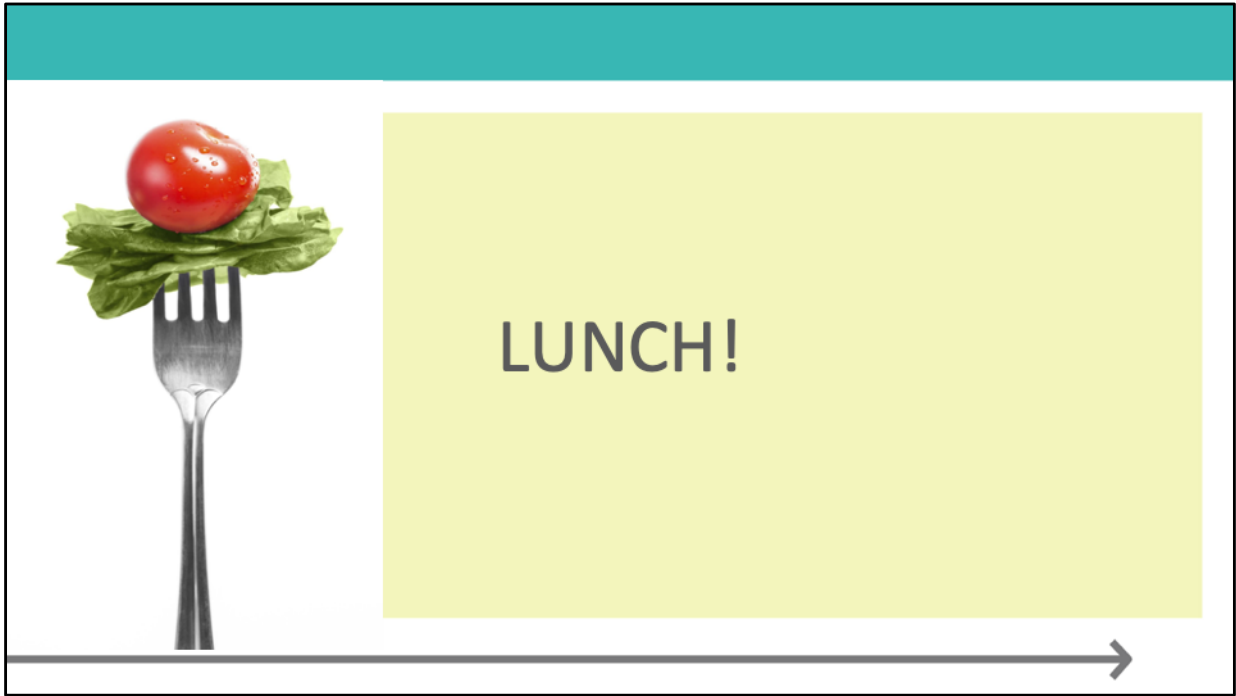
● **Critical Idea:** Determining action steps based on learning is a fundamental component to long-term success.

● **Facilitator says:** When you have finished reading, let's take some time to pause and reflect on our experience in planning for mathematical discourse. Take a moment to read the questions on the slide.

● **Facilitator does:** They will continue working with their 3:00 partner. Give them individual time to think about the questions on the slide. Encourage them to jot down their thinking in their handouts on page 27. After a few minutes, ask participants to share their reflections with each other. Allow a couple minutes for participants to share. Ask a few participants to share what they discussed with the whole group.

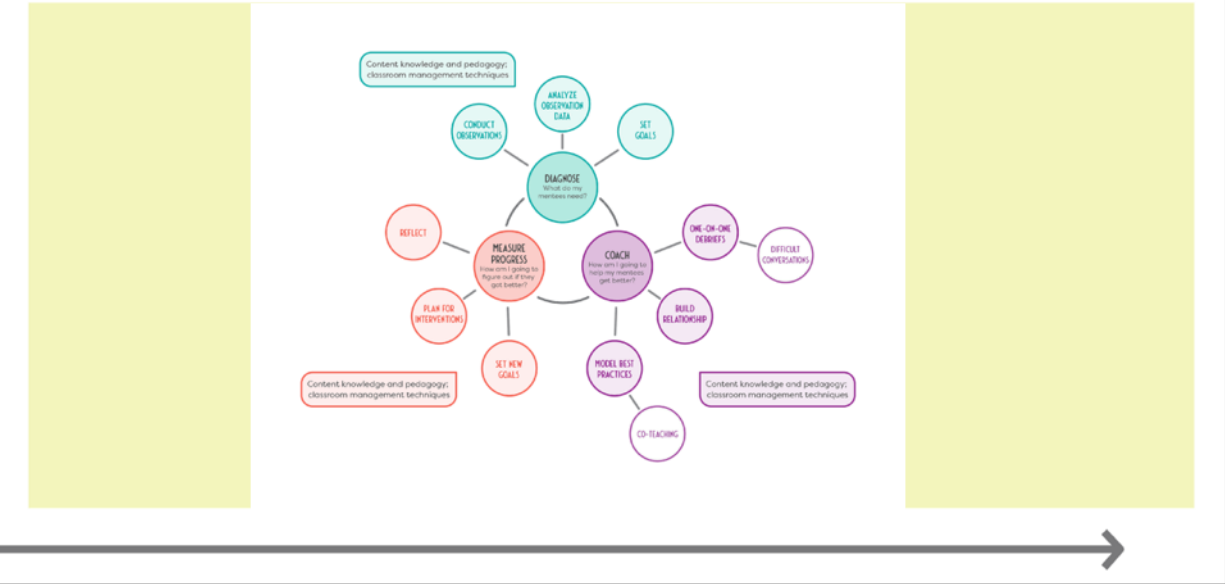
● **Words of Wisdom:** This is an important conversation about the role of the classroom environment in ensuring all students openly engage in meaningful discourse. Participants need time to think about and discuss questions like these, and they need the support that they can find from one another as they think and talk about ways to support students as they engage in meaningful discourse.





SECTION START: 11:45
● **Duration:** 45 minutes

The Mentoring Cycle



● **Duration:** 30 seconds

● **Facilitator says:** Remember, all of our work is grounded in the mentoring cycle.

Module 5 Afternoon Outcomes



- Write a clear and concise coaching plan that enables you to plan interventions aligned to mentee goals.



- Model best practices through co-teaching.

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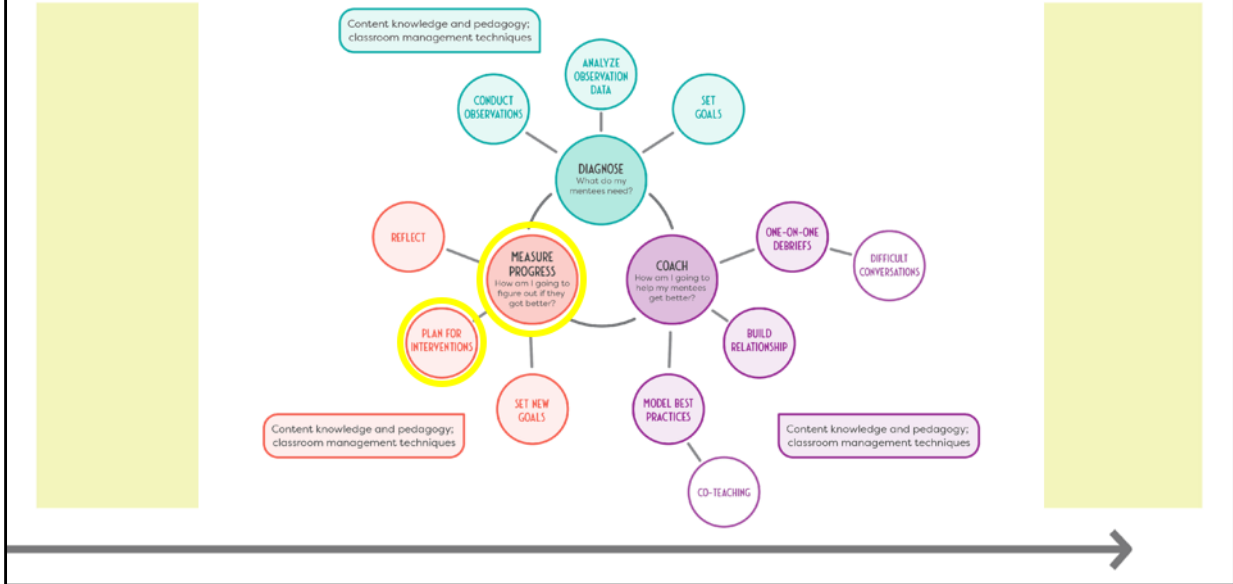
• **Duration:** 2 minutes

• **Facilitator says:** During this afternoon, we will focus on two mentoring outcomes.
[read slide]



- **Duration:** 30 seconds
- **Facilitator says:** In Module 4, we learned how to plan for interventions. We practiced writing a coaching plan in which the intervention was modeling. Today, we'll first practice writing a coaching plan for a co-teaching intervention. Keep in mind that in the real world, a coaching plan will likely include both modeling and co-teaching. Often, when your mentee is learning a new skill, you'll start by modeling it for them and then move to co-teaching. But for practice sake, and since this is the first time you're learning about modeling, co-teaching, and writing coaching plans, we're focusing on them separately.

The Mentoring Cycle



- **Duration:** 30 seconds
- **Facilitator says:** Remember what we discussed yesterday about the term “intervention” - please understand that “intervention” is not corrective or evaluative, but is meant for furthering adult learning. This is about having a growth mindset and engaging in interventions to grow and learn and improve teaching practice.

Plan for Interventions: Three Key Components


- Clarify the new learning
- Align the intervention method
- Write a coaching plan



- **Duration:** 30 seconds
- **Facilitator says:** So we'll start by quickly reviewing the first component, clarifying the new learning.

Identify Learning Priorities By Considering...

Content	Practice
What does my mentee need to understand?	What do I lean on in my teaching practice in order to do this?
What does the Tier 1 resource recommend?	What does my mentee need to be able to do?
How could my mentee gain this knowledge?	How could my mentee gain this skill?



Duration: 1 minutes

Facilitator Says: Remember, when I am taking a few minutes to really consider what is involved in mastering a SMART goal, I can consider questions in the areas of Content and Practice. By reflecting on these questions, I can clarify for myself what my mentee needs to learn, which will then prepare me to write out, and then engage in, a coaching plan that will support them in doing this learning. This chart is also on pg. 28 of your handout.

“What Is My Mentee Going to Need to Learn?”

SMART goal: *During the next unit, the teacher will solve each task she’s planning to discuss in at least 3 different ways prior to teaching in order to better understand the mathematics behind the task so that she can lead more effective math discourse.*



● **Duration:** 3 minutes

● **Facilitator says:** Let’s take a look at a sample mentee SMART goal that could be made with a mentee based on diagnosing needs from analyzing observation data. You’ll notice that this goal is aligned to our learning this morning in the 5 practices. I’m going to re-read the goal and think, “what is this mentee going to need to learn in order to meet this SMART goal?”

● **Facilitator does:** Read goal

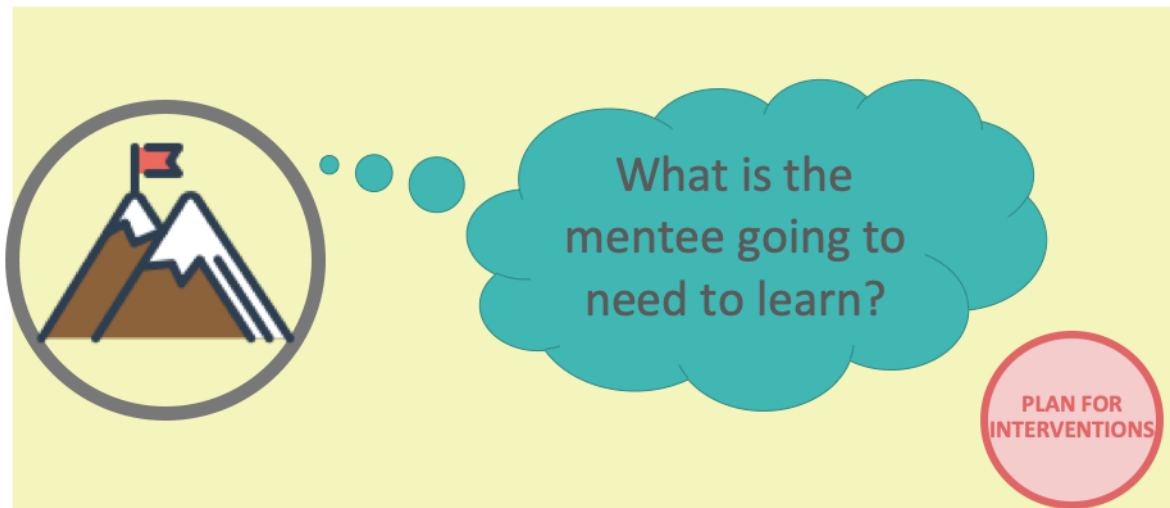
● **Facilitator says:** So let me think about the content we learned this morning. This is where I’m going to need to use my knowledge and understanding as a more experienced teacher to support my mentee - What do I lean on in my teaching practice in order to do this? What is my mentee going to need to learn in order to meet this SMART goal? I’ll think aloud about one thing for content and then you’ll have a chance to think about it in the areas of content and practice.

● I think for this mentee, one thing in terms of content they need to learn is the

different ways to tackle each task. They might have just one way that comes to mind for them right away and might not actually know other ways to approach the task off the top of their head.

- So that is one thing that I think, based on my experience, a mentee would need to learn in order to meet this SMART goal.

Clarify the Learning Priorities



● **Duration:** 5 minutes

● **Facilitator says:** So now it's your turn to try this. On pg. 28 in your handouts you'll see the SMART goal I just thought about. With your table, take 2 minutes to discuss what else you think the mentee would need to learn in order to meet the goal. You can take notes in the box below the goal. You can also refer to our materials on the 5 Practices from this morning to support you.

● **Facilitator does:** Circulate and support as needed. After 2 minutes, ask tables to share out other examples of learning the mentee would need to engage in for the example SMART goal, in the areas of content and practice.

● **Note:** Some expected responses for this SMART goal that you should share if they are not shared:

- Content:
 - Study the coherence map for pre-requisite understanding students should bring to solving the task

- Study what approaches the Tier 1 curriculum includes
- Understand the distinct strategies in each approach and which strategies are most useful in addressing the mathematics of each task
- Practice:
 - Learn methods they can use to find as many ways as possible to approach a task, such as solving the task with other adults, looking in resources, or asking more experienced teachers how their students have solved the task in the past
 - Build an understanding and acceptance of why there is more than one valid way to approach a conceptual understanding task
 - **Learn how to look for those anticipated student responses while facilitating a task**
 - **Learn how to respond to what students produce while they are working on the task**
 - Note: These last two points are very important to bring up as they directly relate to the activities that would happen while the mentor and mentee are co-teaching the lesson together

●**Facilitator Says:** So as you can see, there are several things in there that I, if I'm the mentor, could support them with. While all of the things we mentioned are needed in order to meet that goal, it is okay to zero in on one rather than trying to weave all of them into the coaching plan - it's better to be focused and make progress than to try to do everything and not accomplish anything because it's too much to tackle.

Mentor Learning Before Mentee Learning



Review: What does the mentee need to learn and be able to do?

Consider: What does the mentor need to know and be able to do to support the mentee?

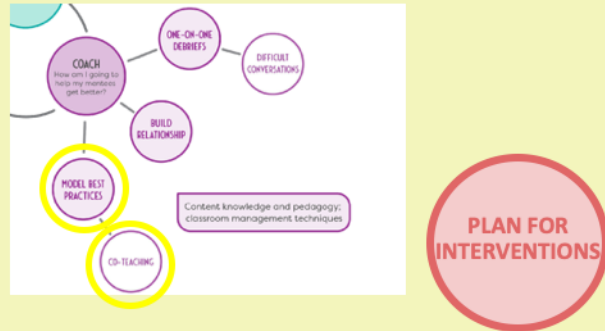
Plan: Timing and resources to support your learning.



- **Duration:** 2 minutes
- **Facilitator says:** Remember, mentor learning precedes mentee learning just as mentee learning precedes student learning. It is all part of the continuous learning and improvement process.
- **Facilitator says:** Remember, if the mentor learning priorities are significant then you will want to record them in your coaching plan to ensure you have adequate time to prepare before you begin working with your mentee on his goal. Sharing your learning goal with your mentee will demonstrate how everyone continues to learn throughout their career.

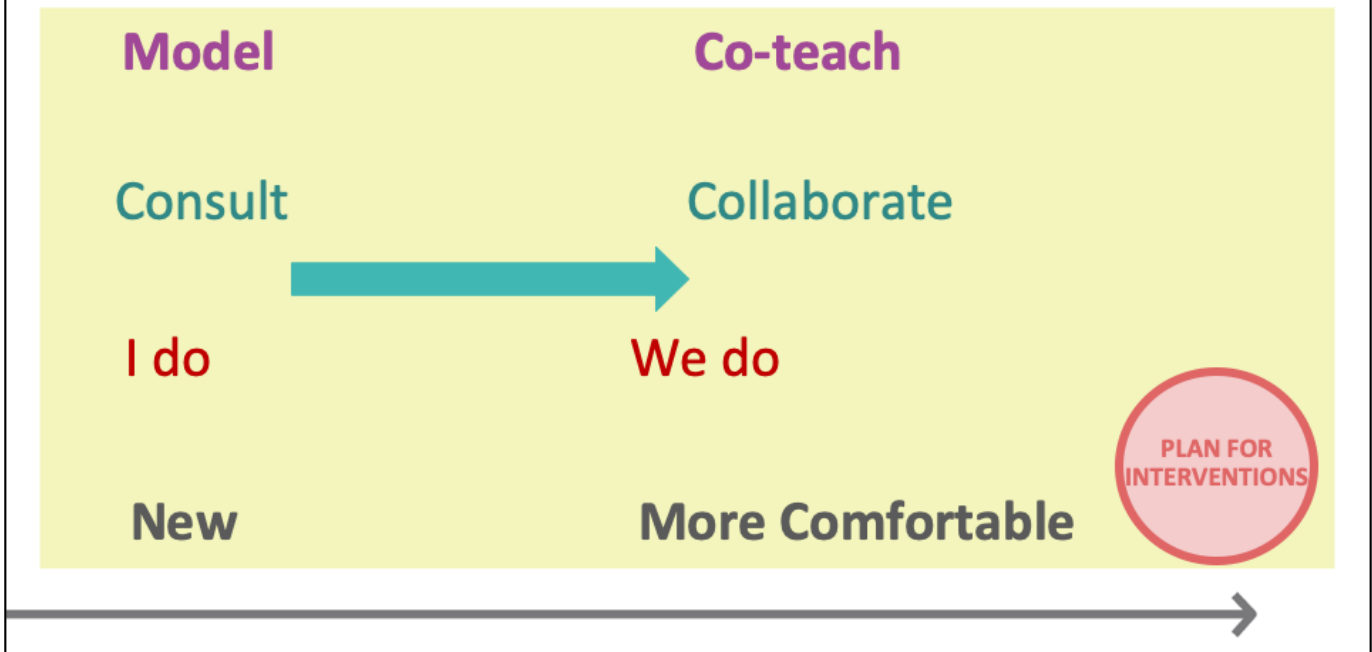
Plan for Interventions: Three Key Components

- Clarify the new learning
- Align the intervention method
- Write a coaching plan



- **Duration:** 1 minute
- **Facilitator says:** Remember, next we align the intervention method - modeling or co-teaching.

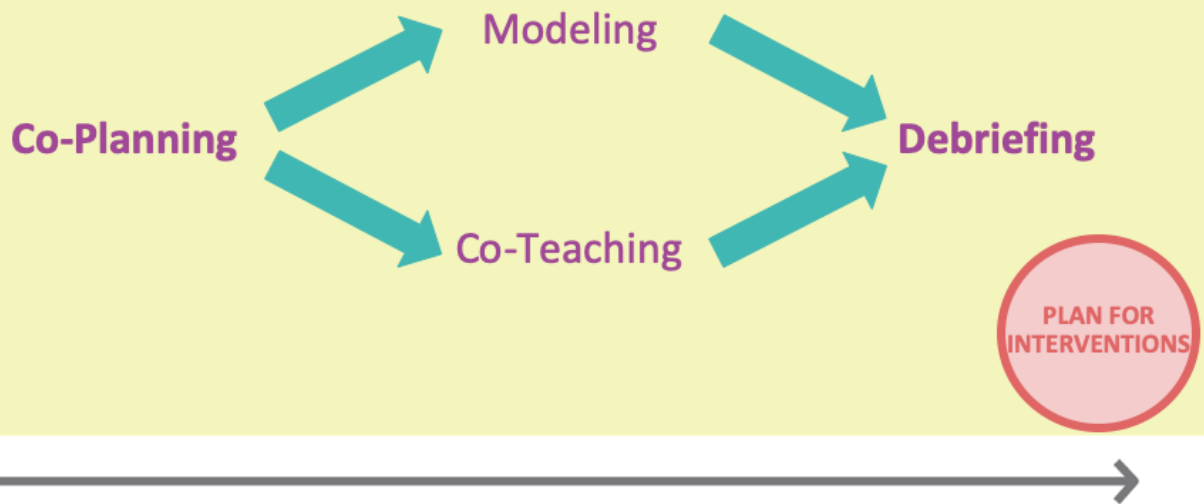
Which Method Aligns Best?



- **Duration:** 2 minutes
- **Facilitator says:** As we introduced yesterday, the two methods in your mentoring cycle are modeling and co-teaching. Modeling is about the consultant mentor stance. It's an "I do" for the mentor and is used sparingly, only when the mentee is new to something. Co-teaching is about the collaborate mentor stance. It's a "we do" for the mentor and mentee and is used as soon as the mentee is comfortable to try something out. Although I do think it is important to note that while the modeling is solely done by the Mentor, there is a co-planning component that comes before the model lesson during which the mentor and mentee work together to plan the model lesson. However, the mentor still really is guiding this process and taking the lead in teaching it. Co-teaching is something the mentor and mentee do together, so a "we do". And then during that co-planning piece that occurs with co-teaching as well it becomes more of a conversation between mentor and mentee with less "taking the reins" by the mentor since the mentee is possibly more comfortable with the content at this point.
- **Facilitator says:** Mentors use co-teaching to demonstrate growing confidence in mentees and support achievement of their SMART goals.

- **Facilitator says:** For the purpose of today, we are assuming the mentee is ready for co-teaching.

Both Methods Involve...



Duration: 1 minute

Facilitator Says: And of course both methods involve co-planning and debriefing.

Co-Teaching: What have you experienced?

Think-Pair-Share: What key points do you know regarding co-teaching?

- Two teachers working together with groups of students; sharing the planning, organization, delivery, and assessment of instruction as well as the physical space (Bacharach, Heck, & Dahlberg in Murphy & Scantlebury, 2013)
- Co-planning, co-teaching, & co-reflecting
- Use when mentee is ready to practice in small segments with support



- **Duration:** 10 minutes

● **Facilitator says:** Take 1 minute to jot down some ideas or key things you know regarding co-teaching. After 1 minute you'll pair up with a shoulder partner to share and add to your notes.

● **Facilitator does:** gives 1 minute of quiet work time followed by 2 minutes of shoulder partner share time. Invite a few participants to share out with the whole group encouraging those who have ever done a co-teach to share their experiences with the group.

● **Facilitator says: (animate the slide to reveal key points - elaborating more on those that did not come up during the whole group share).**

- We define co-teaching as two teachers, like a mentor and mentee, working together with groups of students - sharing the planning, organization, delivery, and assessment of instruction as well as the physical space.
- Also, much like model teaching, the three main steps include planning, teaching and debriefing or reflection, but all are done collaboratively - whereas when we talked about modeling in the previous module the mentor takes on a more direct, consultant type role.

- We want to use co-teaching when the mentee is ready to practice in small segments with support. An advantage is that the mentee will have your immediate support should he or she need it and student learning is not likely to be negatively impacted. A disadvantage might be that the mentee remains too dependent and unwilling to take equal responsibility for decisions and teaching.

Types of Co-Teaching

- One teaches, one observes students
- One teachers, one assists
- Station teaching
- Parallel teaching
- Supplemental teaching
- Alternative or differentiated teaching
- **Team teaching**

Team Teaching

- Jigsaw
- Whisper-in
- Teach, pause, discuss
- Share roles

PLAN FOR INTERVENTIONS

● **Duration:** 8 minutes

● **Facilitator says:** There are a variety of types of co-teaching. When using co-teaching as a mentor strategy, it's hard to tell who the mentee is and who the mentor is, because both are engaged and involved partners in the delivery of the lesson. Co-teaching is a really exciting mentoring practice because there are so many different variations that you can use based on your mentee's needs.

● **Facilitator does:** Read left box.

● **Facilitator says:** Today, we're going to specifically discuss Team Teaching as a method for intervention for supporting your mentee. (Participants may take notes on page 29 of their handout)

● **Facilitator does:** Animate right box.

● **Facilitator says:** So team teaching is an excellent mentoring method because both of you are right there together, trying things out together and learning together. This allows you to be right there supporting when your mentee

tries something out, and allows them to see you up close and be involved when you try something out.

- The first type we're going to discuss is the "jigsaw" type of co-teaching. When you "jigsaw," you and the mentee will break up the lesson into parts and each of you will take the lead on some of the parts. When you are not the lead, you are sitting right there supporting the lead. If a mentee isn't brand new to something but still isn't very comfortable, you can take the more "meaty" parts of the lesson that require more heavy lifting, while the mentee takes the parts they are comfortable with. Or, if the mentee is ready for a challenge, you can take the other parts of the lesson off of their plate, allowing them to focus on the part they really want to push themselves with. You'll ask your mentee, "what would you like to do, and what would you like me to do?"
- The second is the "whisper-in." When you do this, you'll be sitting right next to your mentee while they're teaching, ready to give them some tips on the spot. You may have suggestions with real-time problem-solving, clarifying vocabulary, supporting student engagement, or adjusting the pacing of the lesson to better align with the needs of the students.
- The third is "teach, pause, discuss." In this type, you or the mentee will be taking the lead with teaching. At predetermined spots OR in the moment based on need, you or the mentee can "pause" the lesson, giving the two of you time to discuss what's happening, before resuming the lesson. This is most effective when one of you notices something and you want to pause and address in the moment.
- The last is "share roles." As you know, there are a many different roles a teacher has to take in any one lesson - all at the same time. You can be side-by-side with the teacher, with both of you taking on different roles in the lesson. For example, one of you may be leading a discussion while the other creates a chart of student responses. This is a nice one because you can be right there ready to support the mentee while they're teaching!

Plan for Interventions: Three Key Components

- Clarify the new learning
- Align the intervention method
- Write a coaching plan



- **Duration:** 1 minute
- **Facilitator Says:** And then, once we've clarified the new learning and aligned the intervention method, we write the coaching plan.

What Could the Learning Look Like with the Method?

Learning the
mentee needs
to engage in



Chosen
intervention
method



- **Duration:** 1 minute
- **Facilitator says:** Remember, this means planning what the learning could look like with the chosen method.

Write the Coaching Plan

- Mentee's SMART goal(s)
- Specific coaching activities and resources you will engage in with mentee to achieve goal(s)
 - How each are aligned to the goals
 - Why each activity and resource will be effective in helping the mentee achieve the goal(s)
- How you will monitor mentee's progress toward goal(s)
- How you will integrate relationship building into each aspect of the intervention
- Projected timeline for intervention



Duration: 2 minutes

Facilitator Says: Then, you'll turn those ideas into a clear and concise coaching plan. The plan should simply state what intervention you'll use to support your mentee, and when. The most useful mentee coaching plans have the components you see on this slide. Because you are full-time teachers taking on mentoring as a leadership role, our mentee coaching plans err on the side of being more simple than a coaching plan a full time coach might put together. You can see several mentor coaching plan templates on pages 31-33 of your handouts. One has been started for you - we'll use that one today during the session. The others are blank - those are for you to bring back to your school to photocopy and use with your mentee - or, if you find yourself being ambitious during our practice today, you might use up a couple of the blanks as well as you practice writing your practice coaching plan.

Facilitator Does: Read slide

Try It Out: A Practice Coaching Plan

The image shows a 'Mentor Coaching Plan' form. At the top, it has logos for 'Louisiana Department of Education' and 'Learning Forward'. The form includes a section for 'Mentee SMART goal(s)', a table for 'What activities and resources will mentor and mentee engage in to achieve goal(s)?', and a section for 'How will you monitor your mentee's progress toward the identified goals?'. The table has five columns: 'Specific Activity or Resource', 'How is it aligned to the goal(s)?', 'Why will it be effective?', 'How will you integrate relationship building?', and 'Projected timeline'. A red circle on the right side of the form contains the text 'PLAN FOR INTERVENTIONS'. A large arrow points to the right at the bottom of the form.

Specific Activity or Resource	How is it aligned to the goal(s)?	Why will it be effective?	How will you integrate relationship building?	Projected timeline

Duration: 10 minutes

Facilitator Says: So let's try it out. We're going to return to our example scenario - our mentee who is ready to learn how to anticipate student responses prior to teaching a math lesson.

Using the started coaching plan template on pg. 30, you are going to meet up with your 6:00 partner to try out writing out a coaching intervention plan.

Because this is practice, just like yesterday, you'll have the freedom and flexibility to discuss and try out some different formats in your plan in the areas we discussed yesterday of location, time, "bite size," and size of group. Remember, we're staying focused on anticipating student responses and co-teaching, but the other variables are things that you can vary. Also remember to always include co-planning and debriefing before and after every time you would be in the classroom.

You'll have 8 minutes to try writing a coaching plan out. Go ahead and find your partner, find a comfortable spot for the two of you to work and get started. You should bring your handouts and any other materials you may need with you as you work. When you first sit down, take a minute to read through the example that has been completed for you. Then, discuss together - what would you write to continue

this plan, focusing on co-teaching?

Facilitator does: Circulate and support as partners are working. Make note of any insightful things that people include in their practice plans, especially if they are trying out things that they plan to use when they return to their schools. Use the last 2 minutes of this section to share out any of these noticings you make. **For the purposes of this SMART goal, you should see that the mentors have planned to engage in anticipating student responses while co-planning, while co-teaching, AND while debriefing the co-taught lesson.** Since this is their second time practicing writing a coaching plan, you will hopefully see participants who have used some of the blank sheets as well and planned out several cycles of co-planning, co-teaching, and debriefing. If so, share those. This is what we would hope to see in reality, as it usually takes several times before a mentee starts to become comfortable with a teaching practice. Emphasize to participants that they can modify the coaching templates back at their schools to make them as long as they need them to be! In the real world, they may even start out with a few ideas and then add onto it once the plan is underway!

Reflect: Cumulative Learning

- Yesterday I ...
- Today I ...
- Now I ...



● **Duration:** 3 minutes

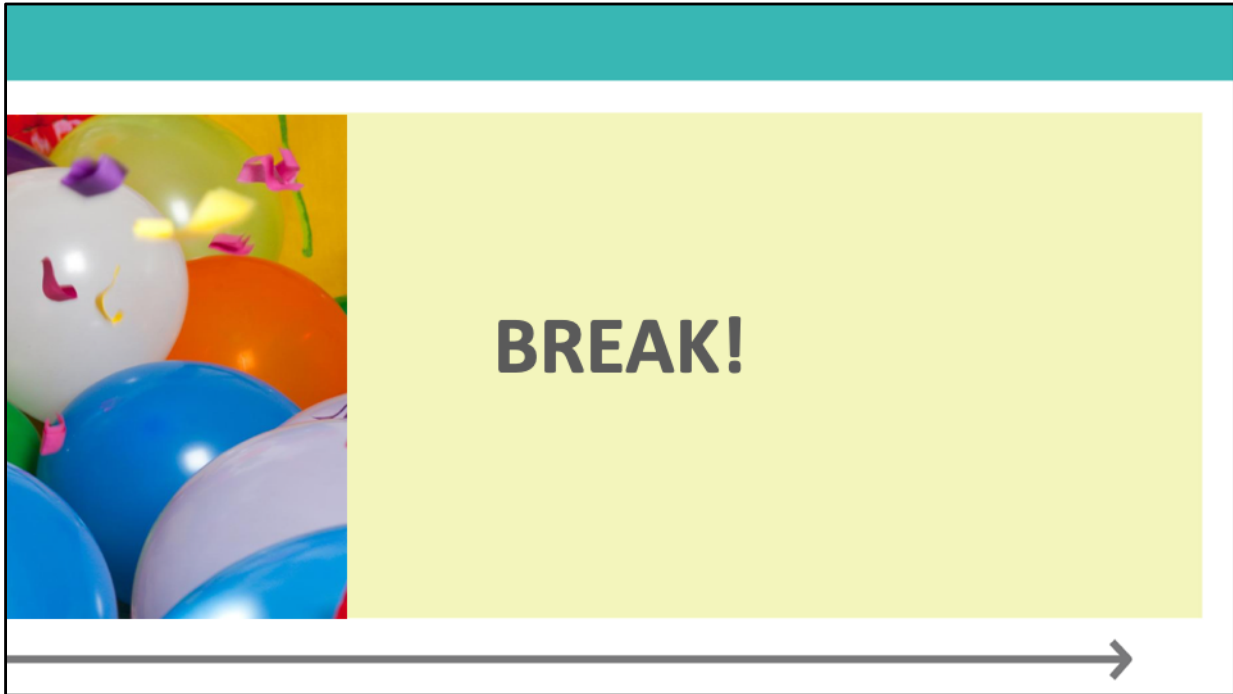
● **Facilitator says:** Yesterday was your first time writing a coaching plan. You walked away from that experience with new understandings and knowledge. Today, you got a second chance to practice writing a coaching plan. Take 2 minutes to jot on pg. 34 in your handouts: what did you understand about planning for interventions after yesterday? What new understandings did you add on today? Then put it all together - what is your cumulative understanding of planning for interventions?

Plan for Interventions: Key Takeaway

Coaching plans keep mentors
and mentees on track to
achieve SMART goals.

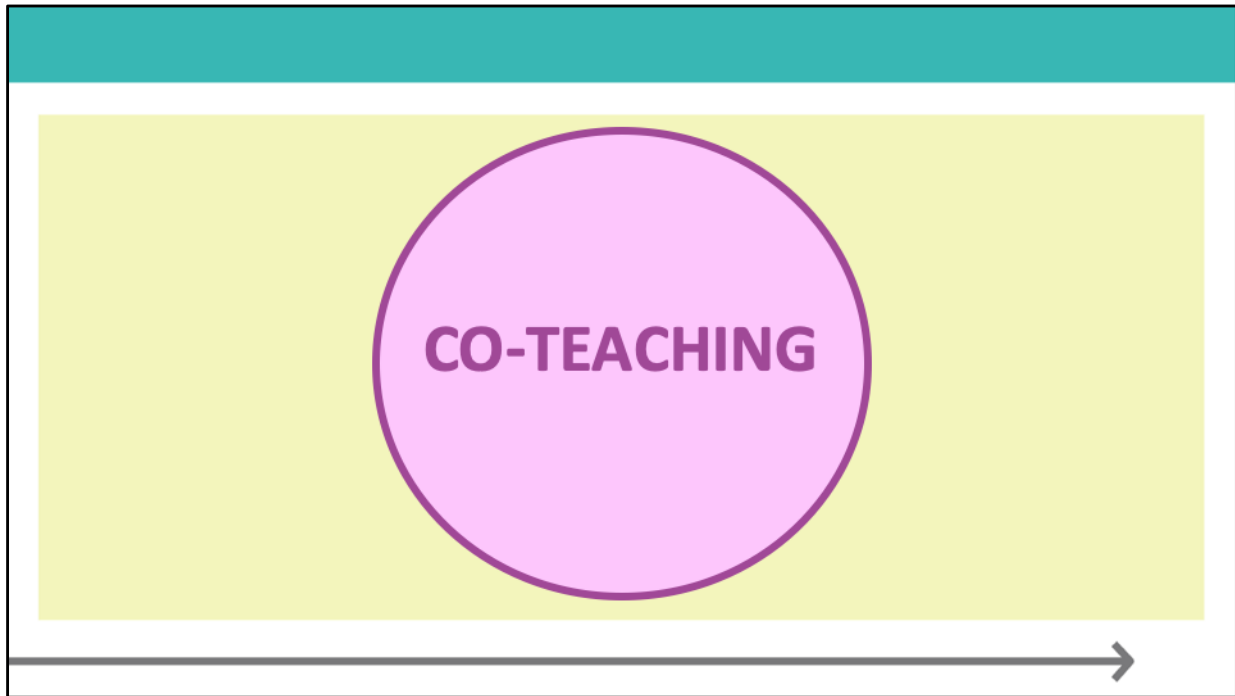


- **Duration:** 30 seconds
- **Facilitator says:** As we learned yesterday, [read slide].



SECTION START: 1:30

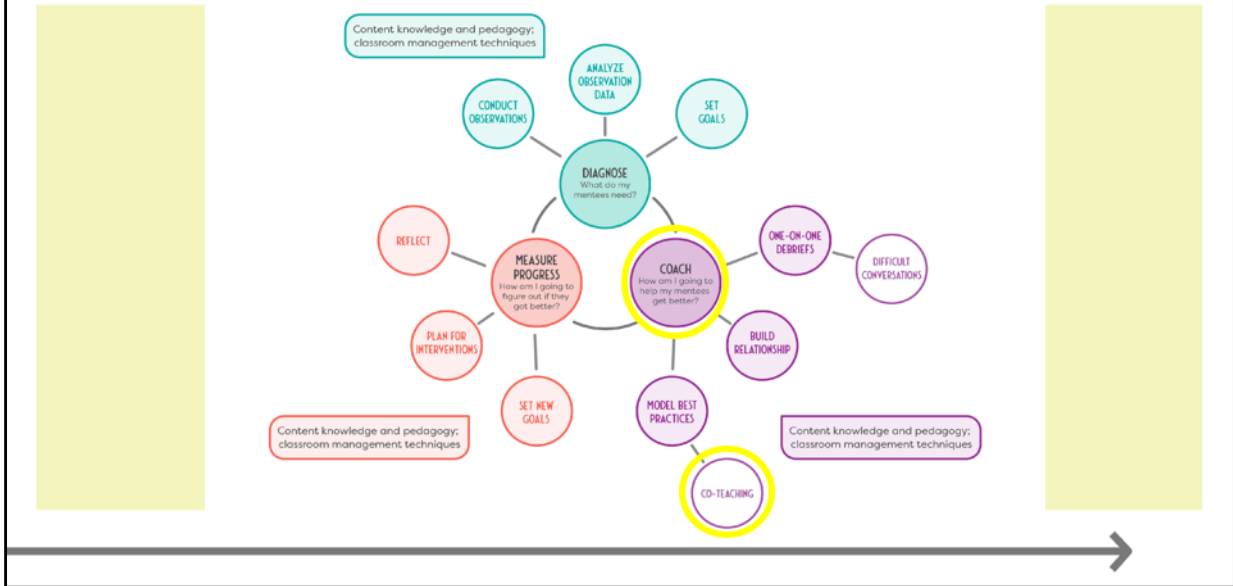
●**Duration:**15 minutes



SECTION START: 1:45

- **Duration:** 30 seconds
- **Facilitator says:** So now that we've practiced writing a coaching plan for co-teaching, let's practice co-teaching to help you feel ready to use this mentoring practice with your mentee.

The Mentoring Cycle



- **Duration:** 30 seconds
- **Facilitator says:** Remember, co-teaching is a way, along with modeling a lesson or activity, to model best practices for your mentee. We'll be focusing on how to engage your mentee in co-teaching to help them achieve their learning goals. So for our purposes, we're going to zoom in on one part of the coaching plans we just practiced writing - one co-teaching lesson with your mentee (and it's co-planning and debriefing, of course!)

Co-Teaching: Three Key Components

- Co-plan instruction and co-teaching method
- Co-teach the lesson
- Debrief the lesson



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- **Duration:** 30 seconds
- **Facilitator says:** We are going to revisit the 3 key components for co-teaching by diving into each component a little more deeply. Let's start off with co-planning the instruction and co-teaching method.

Co-Plan Instruction

- Revisit **agreements**
- Confirm the **purpose/goal** of the lesson and **connection to SMART goal**
- Create a **“look-fors” checklist** based on the goal of the lesson or activity
- Select **best model for co-teaching** to achieve student and teacher learning outcome
- **Make thinking visible** as you co-plan what the lesson requires to be successful, including any tweaks you need to make to integrate your chosen co-teaching model



-
- **Duration:** 10 minutes
 - **Note:** The bullets included on the slide are listed on page 35 of the handout.
 - **Facilitator says:** When you co-plan instruction that will utilize the co-teaching method, many of the things you discuss will be the same as when you co-plan instruction that will utilize modeling - such as revisiting your partnership agreements, confirming the purpose of the lesson and how the work you'll do connects to the smart goal, and creating a look-fors checklist. When modeling, the look-fors checklist is used by the mentee; when co-teaching, the look-fors checklist will be used by both mentor and mentee.
 - Some of the things you'll co-plan will be slightly different. For example, you'll need to select the model of co-teaching that best meets the needs of the students and your mentee. Also, when you make your thinking visible as you co-plan whatever is needed for the lesson to be successful, you might need to tweak the lesson slightly to make it work for the co-teaching method you choose, such as clearly delineating different parts if you're going to jigsaw it.
 - Turn to page **xx** in your packet. There, you will see a transcript of a short segment of a co-planning conversation between the mentor and mentee who are working on helping the mentee learn how to anticipate student responses

You are going to read this to give you a better sense of what co-planning for co-teaching looks like in action.

- **Facilitator does:** Give 5 minutes for participants to read transcript.
- **Facilitator says:** One thing you should have noticed in this co-planning transcript is that the mentor and mentee actually engaged in doing math together as they were co-planning. This is a great example of doing whatever co-planning the lesson needed to be successful, and also a great example of how co-planning can be a great time to make progress towards achieving the SMART goal! Another thing you should have noticed is that this mentor is using several different team teaching structures. They're jigsawing the parts of the lesson, there's one part when they are sharing the role of selecting student work, and they're using "teach, pause, discuss" while the mentee is teaching.

Try it Out: Co-Plan Instruction

- Partner A = Mentor
 - Partner B = Mentee
- Why is it important to co-plan with the mentee prior to co-teaching?**
- Engage in a co-planning conversation



- After 5 minutes, switch roles
- What is valuable about having this type of conversation prior to the co-teaching lesson or activity taking place?**
- Then, take 5 minutes to develop a “look for” checklist together



NOTE: the wording on the slide is NOT messed up, it will be animated when it's in presentation mode.

- **Duration:** 20 minutes
- **Facilitator says:** Now we want to give you a little time to practice your own co-planning conversation. To engage in this role-play we are going to ask you to get together with your 9:00 partner.
 - We'll use the same Eureka Math lesson that we worked with this morning. This lesson can support your role play with a fictional mentee's anticipating student responses SMART goal. It's in your handouts starting on page 36-37. The SMART goal is one that we discussed earlier during plan for interventions and can be found on page 28 of your handout. The lesson is back on p. 7. You may also reference the transcript you just read on page 36-37. (Provide 5 minutes to review the lesson and materials)
- Okay, with your 9:00 partner, decide which one of you will be partner A and which will be partner B. Partner A will start off playing the role of the mentor and Partner B will be the mentee. You will have 5 minutes to engage in a practice co-planning conversation using the SMART goal and the lesson plan provided. After 5 minutes we will have you switch roles and Partner A will become the mentee and Partner B the mentor and they will have the chance

to practice this type of conversation as well. We know this may feel awkward at first, but engaging in this practice is important so you will feel better prepared in engaging in this type of conversation in real life with your mentees. Please feel free to make these conversations as realistic as you like! Think about what you might actually say in a co-planning conversation. Try your hand at a different part than in the sample, or with having the conversation go in a different direction!

- **Facilitator does:** Circulate as participants are practicing their co-planning conversations, providing feedback and support where necessary. After 5 minutes, indicate to the group to switch roles to allow both partners to have the opportunity of playing the role of the mentor and mentee.
- **Facilitator says:** Now we want to give you the opportunity to create a “look-fors” checklist for the skill you were just practicing a co-planning conversation for. If your mentee was working on anticipating student responses, and you decided the best intervention to support them in improving in this area was to co-teach, what would you want them to look out for as you teach? What would you want to look for while they teach? Take 5 minutes to continue working with your 9:00 partner and develop some “look-fors” you think would be good for the mentee to have on a checklist for this particular skill. You will see that we’ve provided the first bullet of the “look-fors” checklist on page 38 of your handout to get you started.
- **Facilitator does:** Circulate to provide support as participants work on their checklists. After 5 minutes, invite a few participants to share out their ideas with the whole group.
- **Facilitator says:** (Pose the questions to the group & **animate the slide**) So why is it important to co-plan with the mentee prior to co-teaching? **Animate the slide.** What is valuable about having this type of conversation prior to the co-teaching lesson or activity taking place? (invite a few participants to answer each question) As we move into the next piece, co-teach the lesson, we would like for you to stick with your 9:00 partner a little longer because you will work with them during the next two activities as well. So hang tight.

Co-Teaching: Three Key Components

- Co-plan instruction and co-teaching method
- Co-teach the lesson
- Debrief the lesson



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- **Duration:** 30 seconds
- **Facilitator says:** After you've co-planned the instruction and co-teaching method, it is now actually time to engage in the co-teaching of the lesson, our second key component.

Co-Teach the Lesson



- **Duration:** 8 minutes
- **Facilitator says:** This video is a great example of team teaching in action, one of our co-teaching models we've been discussing. The video also interviews the mentor and mentee teachers so they can share the benefits of team teaching and why they both see it being a powerful and impactful learning experience for them and their students. As you watch the video, take note on the benefits of team teaching that they share.
- **Facilitator does:** Play the video. It is about 4 minutes long. Participants can take notes on page 40 of the handout if they'd like.
- **Facilitator says:** With your 9:00 partner, take 2 minutes to share what you heard about some of the benefits of the team teaching model.
- **Facilitator does:** Circulate to listen in on conversations. After 2 minutes, have a few participants share out some of the benefits they heard in the video with the whole group.

Co-Teach the Lesson

- Person A = Mentor
- Person B = Mentee
- 5 minutes to role-play
- Switch roles
- 5 minutes to role-play
- Reflect



CO-TEACHING

- **Duration:** 15 minutes
- **Facilitator says:** Now that you've practiced co-planning a co-teaching lesson, and you've seen some great examples in the video we just watched, we want to give you some time to role-play just a short segment of a co-teaching lesson with a partner. We are going to stick with our same scenario from earlier that you've already "co-planned" with your 9:00 partner. Remember the lesson plan is in your handouts starting on page 7. Decide which partner will be person A and which will be person B. Person A will play the role of the mentor and person B will be the mentee for this first round. You will only have 5 minutes to role-play so try not to overthink it. Remember, you want to work off of the plan you already created during the co-planning conversation role-playing. Do your best to envision you both in a classroom, with students in front of you. After 5 minutes, I'll let you know it is time to switch roles - partner B becomes the mentor and partner A the mentee. Feel free to continue on from where you left off but just in the switched roles, or start over from the beginning in your new roles. I'll leave that decision up to you and your partner.
- **Facilitator does:** Start the 5 minute timer. Circulate to listen in on the role-playing jotting down some feedback notes to share with the whole group

later. After 5 minutes, inform participants they should switch roles and restart your timer. Afterwards, share some of the positive things you observed as you circulated during the role-playing with the whole group. Then pose the following reflection question to the group and have a few participants reflect and share out.

- **Facilitator says:** What are you most looking forward to when it comes to co-teaching with your mentee?

Co-Teaching: 3 Key Components

- Co-plan instruction and co-teaching method
- Co-teach the lesson
- Debrief the lesson



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- **Duration:** 30 seconds
- **Facilitator says:** The final key component of co-teaching is to debrief the lesson following the co-teach lesson. This process is very similar to debriefing the lesson after the modeling of a lesson or activity, which we discussed and practiced yesterday so hopefully this next part sounds and feels familiar.

Debrief the Lesson

- One-on-One Debrief vs. Model Best Practices Debrief vs. Co-teach Debrief
- Co-Teach Debrief Tool Purpose:
 - Mentor and mentee both reflect using look-fors
 - What worked and what can be improved upon
 - Review the lesson impact on student learning
 - Reflect on co-teaching and how to strengthen in the future

The purpose of co-teaching is learning.
Amplify learning in the debriefing.



- **Duration:** 2 minutes
- **Facilitator says:** So far we've talked about two different kinds of debrief conversations. We've learned about the one-on-one debrief, where the purpose is to identify and finalize the 1-2 SMART goals with your mentee as a result of what you saw during the classroom observation. Then yesterday we learned about and practiced using a model best practices debrief template to engage in reflection with your mentee following a model lesson or activity. Today's debrief for a co-teach will be very similar to the debrief for modeling. This type of conversation happens a little more organically. It only has space for some pre-planned questions and a spot to take notes during the conversation. Like the other types of debriefs though, you don't want more than 48-72 hours to pass between the lesson and the debrief because you want the lesson to be fresh in your and your mentee's memory.
- The purpose of the co-teach debriefing tool is to:
 - Reflect on the lesson using the look-fors
 - Discuss what worked well during the lesson and what could be improved upon next time you co-teach a lesson or activity
 - Review the lesson impact on student learning - this may include examining some student work that resulted from the co-teach
 - Reflect on the actual co-teaching experience and discuss ways to

strengthen it in the future.

- **Facilitator says:** Remember that the purpose of co-teaching is learning. We want to make this very clear during the debrief conversation.

Debrief Tool

Co-Teaching: Debrief the lesson

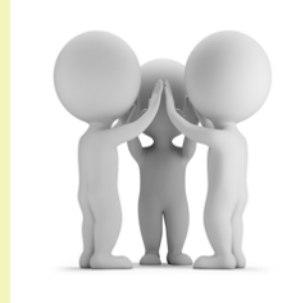
Suggested Guiding Questions for Discussion	Debrief Meeting Notes
Primary Questions	
How did this co-teach lesson or activity help you and your students in reaching desired outcomes?	
What was most effective about the co-teaching strategy on impacting student learning and teaching practices?	
What was not effective about the co-teaching strategy on impacting student learning and teaching practices?	
Application Questions	
What will you continue implementing into your teaching practice as a result of this co-teach?	
What would you change/modify if you were teaching this lesson on your own and why?	
Clarifying Questions	
What are, if any, lingering questions you may have regarding how the lesson went or the implementation of the co-teach strategy used?	
Closing Questions	
What is/are the top learnings you are taking away from this co-teaching experience?	
How can I support you as you continue working on this SMART goal?	
How can we improve our agreements and processes for future co-teaching opportunities?	



- **Duration:** 8 minutes
- **Facilitator says:** In your handouts on pages 41-42, you will find two copies of a debrief tool that can be used following a co-teaching lesson or activity. Take two minutes to look it over.
- **Facilitator does:** Allow 2 minutes for participants to read over the co-teaching debrief tool.
- **Facilitator says:** On pages 43-44, you will see a transcript of a short segment of a debrief conversation, continuing with the example we've been using throughout this section of the training. This mentor and mentee have co-planned, co-taught, and now they are debriefing how the lesson went.
- **Facilitator does:** Provide 5 minutes for participants to read transcript.

Debrief the Lesson

- Form triads
- Designate Person A, B, and C
- A → **Mentee**
- B → **Observer**
- C → **Mentor**
- 5 minutes to engage in debrief, 2 minutes to provide feedback
- Switch roles & repeat



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NOTE: THE SLIDE INCLUDES ANIMATIONS - THE TEXT IS NOT MESSED UP ON THE SLIDE!

● **Duration:** 20 minutes

● **Facilitator says:** Now we want to give you all the opportunity to role play a short segment of a debrief conversation. For this role play, we are going to pretend that yesterday you engaged in the co-teach lesson we've been referring to all afternoon. So your debrief conversations will be in reference to that particular goal with that lesson. To engage in this role-play, you will work in triads with two other people from your learning team. In your triads, decide who will be person A, B, and C. For the first rotation, person A will act as the mentor, person B will act as the mentee, and person C will be an outside observer providing feedback on how the mentor does during the role play practice. The person playing the mentor will facilitate the debrief conversation using the debrief tool on page 43 of your handout. The person playing the role of the mentee should do their best to be a thoughtful, reflective classroom teacher to make this experience more authentic. The person playing the observer should make notes on how the mentor facilitates

the conversation that supported the mentee's thoughtful responses to the questions. Feel free to jot notes to provide specific examples to the mentor about how the behaviors, questioning, paraphrasing, etc. supported the mentee's success. Everyone will have 4 minutes to engage in the debrief conversation, followed by 2 minutes for the observer to provide feedback on how it went. We will then switch roles twice, so everyone can have an opportunity to be in each role. What questions do you have? (answer any clarifying questions needed). Go ahead and form your triads, and set up 3 chairs together for you all to sit with one another. Once I see everyone is set up and ready I will start a 4 minute timer.

Reflection: Co-Teaching

- **Fist to Five**
 - 1 = I have zero confidence!
 - 5 = I could do this tomorrow!
- Share your rating with your 12:00 partner and why you feel that way



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- **Duration:** 5 minutes
- **Facilitator says:** Now that we've gone through all 3 key components of co-teaching, I want you to give yourself a rating using a fist to five rating on how prepared you are feeling to engage in a co-teach lesson or activity with your mentee - if you give yourself a 1 this means you have zero confidence, all the way up to 5 being you could implement this tomorrow. **Pause for a few seconds for participants to rate themselves.** Now I would like for you to meet back up with your 12:00 partner from yesterday. Once you find your partner you will have 2 minutes to share your rating and why you feel this way.
- **Facilitator does:** Circulate and listen in on conversations. After 2 minutes invite a few different participants to share out with the whole group - try to call on participants with varied rating levels. Ask everyone to return to their seats.

Co-Teaching: Key Takeaway

Mentors use co-teaching to demonstrate growing confidence in mentees and support achievement of their SMART goals.



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- **Duration:** 30 seconds
- **Facilitator says:** As we bring this section of our training to a close, here is the key takeaway: Co-teaching is an effective method for modeling best practices for a mentee.

Connection to Assessments

SECTION START: 3:15

- **Duration:** 30 seconds
- **Facilitator says:** So let's take a look at where conducting observations and analyzing observation data appear in the assessments of your mentoring practice. We will also look at which assessment the morning content aligns with.

Mentoring to Improve Content Instruction

Louisiana Department of Education

Mentoring to Improve Content Instruction

Started

Hide Description ^

To ensure students master the content they need to be successful, educators need both deep knowledge of their content and the ability to plan and deliver effective instruction. As part of the mentoring cycle, mentor teachers will diagnose and prioritize areas for growth, provide coaching and support, monitor progress, and adjust course as needed in order to support improvements in a mentee's content instruction. Through continuous relationship building and effective individualized support, mentor teachers can support significant improvement in teaching practices.

- **Duration:** 2 minutes
- **Facilitator says:** Take 1 minute and read through the description of this assessment. (After 1 minute, ask) Where do you see the connection in this assessment with what we've learned so far? (invite a few answers from participants)
- **NOTE:** Answers should include the following:
 - "...educators need both deep knowledge of their content and the ability to plan and deliver effective instruction" - connects to AM math content as an option to use for this assessment
 - "...mentor teachers will....provide coaching and support..." taught today and yesterday

Facilitating Mathematically Productive Discussions



Louisiana Department of Education

Facilitating Mathematically Productive Discussions

Hide Description ^

As the standards for mathematics have shifted from primarily routine procedures and algorithms to also include building conceptual understanding, students must be able to reason, justify and model their thinking in mathematics. Achieving this requires that educators also shift their instruction, so that students are doing more of the cognitive lift. Productive discourse is an instructional tool that facilitates this by allowing educators to use students' developing thinking to help others master the content. Productive discourse also helps educators collect important information about what students are thinking and learning that can be used to adjust instruction.

- **Duration:** 2 minutes
- **Facilitator says:** Take 1 minute and read through the description of this assessment. (After 1 minute, ask) Where do you see the connection in this assessment with what we've learned so far? (invite a few answers from participants)
- **NOTE:** Answers should include the following:
 - "...students are doing more of the cognitive lift...productive discourse is an instructional tool that facilitates this..." - taught this morning in Module 5

The Assessments

<https://my.bloomboard.com/home>

- **Duration:** 5 minutes
- **Facilitator says:** I'm going to log on to the platform and give just a high-level overview of each of these two assessments so you can continue to make connections between what we've learned so far and the expectations of these two assessments.
- **Facilitator does:** Log on using the generic username and password below.
- Review the following highlights live on the platform for participants:
 - Mentoring to Improve Content Instruction
 - Analyze - If participants want to use math for this module, they are technically ready to accomplish this part of the assessment. They know what to "look-for" when it comes to strong math instruction and they know how to conduct an observation, analyze that data to prioritize a need, and set goals. Once they start working with their mentee, they are ready to tackle this part.
 - Develop - If they want to use math, they are also technically ready for this part of the assessment as they know how to

- develop a coaching plan. Once the school year starts they can tackle this.
- Implement - Relationship Building - They are ready to build the relationship with their mentee and can do so and save the artifacts from doing so once the school year starts.
 - Implement - Coaching and Support - They are ready to use both modeling and co-teaching to coach and support their mentee once the school year starts.
- Facilitating Mathematically Productive Discussions
- Analyze - participants are ready for this part of the assessment as they learned this this morning.
 - Develop - they are ready to do this as they learned this this morning
 - Implement - now they will facilitate the discussion they planned in the first two steps making sure to capture the discussion in a video
 - Evaluate - they will write a reflection on the discussion by answering the questions listed.
 - *****They could complete this assessment as quickly as they'd like since they will be readily equipped come the start of the school year*****

<https://my.bloomboard.com/>

Username: learningforwarddemo@bloomboard.com

Password: BBLearning4ward

Work Time



- **Duration:** 15 minutes
- **Facilitator says:** Now take some time to log on yourself and explore these two assessments and see what additional work you see needing in order to accomplish the tasks. Think about what you already feel prepared to complete come the start of the school year. Start to make a plan for completing these assessments. You know your school year, curriculum scope and sequence, etc. When do you see the best time will be to complete these assessments during the school year? We will circulate around as you do this to support and answer any questions.

Work Following Modules 4 and 5

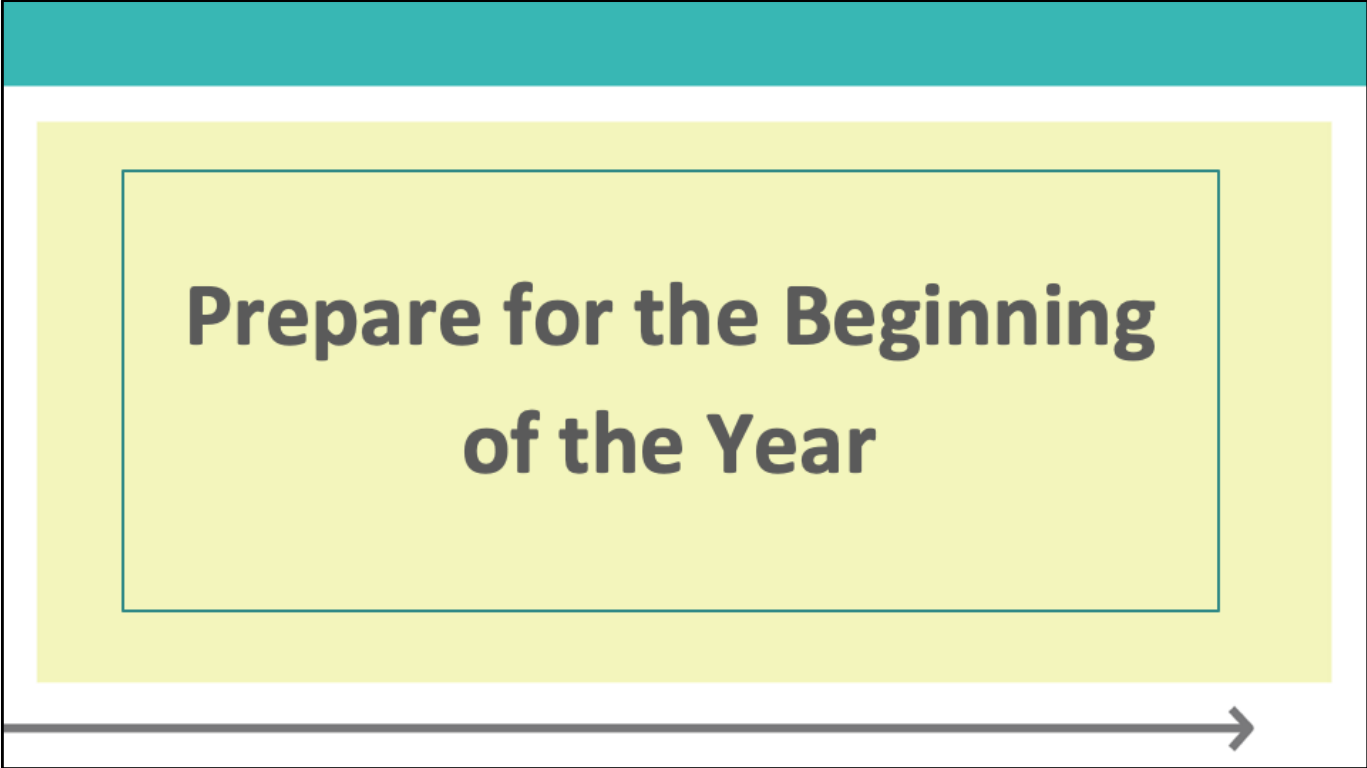
- Continue to plan forward for how you'll lay the groundwork for the work required for the *Mentoring to Improve Content Instruction* and the *Facilitating Mathematically Productive Discussions* assessments.

Bring all of your mentor materials to all of the sessions - especially the artifacts of your work you'll be collecting when you start your work with your mentee!

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Duration: 1 minute

● **Facilitator says:** At the end of every module, we'll let you know what makes the most sense for you to focus on back at your school. Because you are not yet matched with your mentee and actually engaging in mentoring work yet, following this module we recommend that you continue to plan forward for how you'll engage in the work we practiced today. One additional recommendation - since we'll have time to connect to the assessments during every module, your best bet will be to create a binder for yourself for all of your mentor materials - the materials from the modules as well as your mentoring artifacts from your actual work with your mentee. Having those materials all in one place will make it easier for you to complete the assessments and prove your mentoring competence.



Prepare for the Beginning of the Year

SECTION START: 3:45

- **Duration:** 30 seconds
- **Facilitator says:** This is our final day together before the school year starts. So let's take a few minutes to work with your learning team to prepare for the beginning of the year with your mentee. You are welcome to refer back to any of your mentoring materials from any of the first 5 modules at this time.

Make a commitment to start the year strong!

Privately write down one commitment for each:

1. How will you establish a strong relationship with your mentee?
2. How will you engage in beginning of the year mentoring?

Whiparound: Share your commitment with your table group



- **Duration:** 10 minutes

- **Facilitator says:** Research shows that you are most likely to follow through on something if you make a commitment to do it and then share that commitment. A commitment is one specific thing you are promising you will do. So first, we are going to give you 4 minutes to privately write down two commitments on page 44 of your handouts. You can see the questions you'll be making the commitments about on that page and also up on the screen [read questions]. We will let you know when 4 minutes are up. Then, in your learning team you will do two whiparounds. First, you will go around the table and each share your first commitment - one thing you promise to do to establish a strong relationship with your mentee. Then, you will go around the table a second time and each share your second commitment - one thing you promise to do to engage in mentoring right at the beginning of the school year. You will probably get some good ideas of additional things you can do from your fellow team members so have your pens ready during the whiparound.

- **Facilitator does:** Time 4 minutes for private writing. Listen in to whiparounds and share anything you think would benefit the whole group.

Module 5 Morning Outcomes

- Learn a model for facilitating productive student discourse in mathematics.

• **Duration:** 30 seconds

• **Facilitator says:** We did it! We're at the end of another jam-packed two days together. This morning, we [read slide].

Module 5 Afternoon Outcomes



- Write a clear and concise coaching plan that enables you to plan interventions aligned to mentee goals.



- Model best practices through co-teaching.

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•**Duration:** 30 seconds

•**Facilitator says:** And this afternoon we [read slide]

Module 4-5 Survey

Complete the Module 4-5 survey at:

<http://tinyurl.com/y5kyoz9c>

Scroll down on the page to find the survey.



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- **Duration:** 5 minutes
- **Facilitator says:** Please complete the survey before you leave. Your input helps us be better in our work to support your learning. Remember to scroll to the bottom of the page to find the survey.