



Building on Discourse Virtual – Session 1

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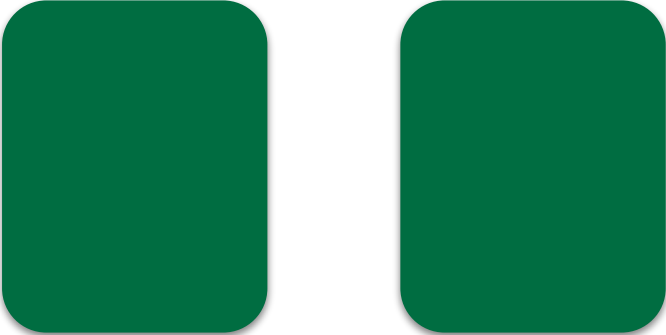
Rev 5/30/23 (ce)

Welcome to Building on Discourse!

Session 1: Rich Mathematical Tasks Foster Discourse

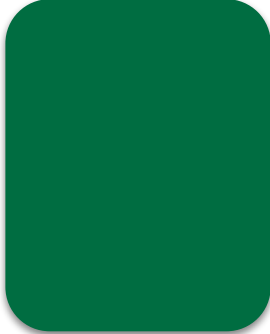


Session Facilitators



Name *Name*

Support



**Regional
Professional
Learning
Coordinator**

Tech Tip

Viewing Options



User list toggle



Layouts

Custom Smart layout

Focus on presentation Focus on video

Cancel Confirm

Layout Settings Modal

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Keyboard shortcuts

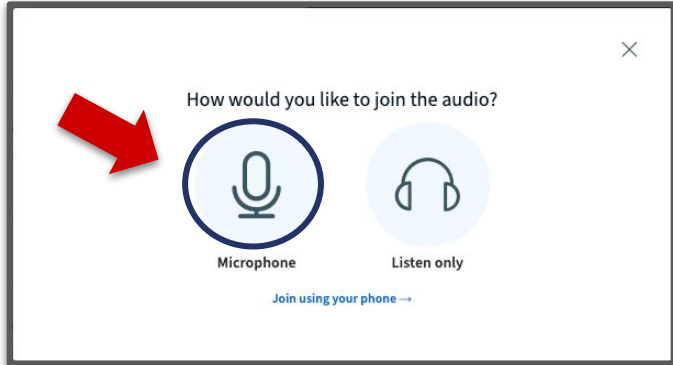
Leave meeting



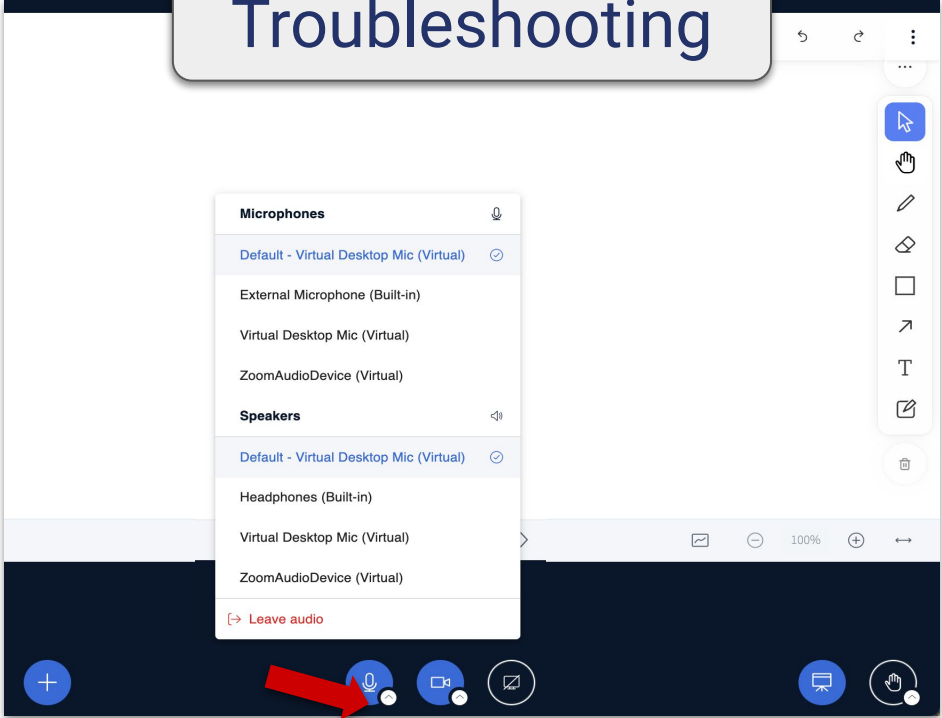
Tech Tip



Audio



Troubleshooting

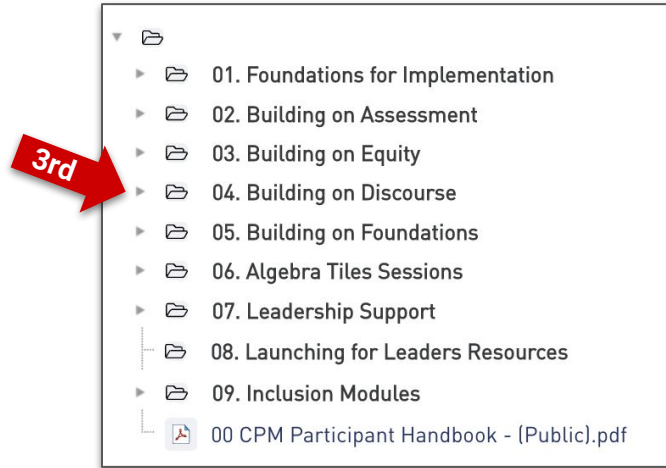
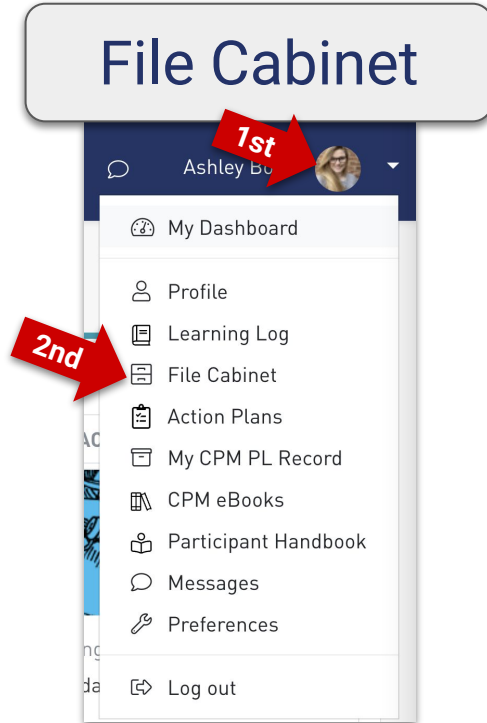


Tech Tip

Getting Session Resources



File Cabinet



Opening

Session 1 Outcomes



Together we will:

- + Experience the Effective Mathematics Teaching Practices through the design of the *5 Practices*.
- + Better understand how facilitating meaningful mathematical discourse develops an equitable, student-centered classroom.

Opening Agenda



Focus: Building on Discourse

- Icebreaker
- Math Task
- Research
- Closure

Welcome

Equity Principles



- + The goal of teaching is to help all students transition from dependent to independent learners.
- + Relationships are of vital importance.
- + Student uniqueness is an asset, not a deficit.
- + Reflection is a crucial part of growth.

Click on your name and set your status to thumbs-up if you are ready to begin.



CPM uses these principles to guide our vision and mission of More Math for More People.

Agenda



Focus: Building on Discourse

- Icebreaker
- Math Task
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Agenda



Focus: Building on Discourse

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Math Task

Focusing Learning

Learning Target:

Consider how a teacher's decisions and actions affect meaningful math discourse.

Math Task

Inspirations and Ideas
Lesson 4.7 – Problem 4-17



Student Math Goal:

Demonstrate your understanding of ratios by applying strategies to the problem, “How Far Did She Run?”



Team Collaboration Goal:

Share ideas with the team, and be willing to try multiple strategies.

Math Task

Lesson Launch



How Far Did She Run?

LESSON 4.7

Did you know exercising increases your brainpower and your ability to focus and learn? Today's problem set is about people getting exercise, but there is something else going on that can increase your brainpower as well: developing flexibility in math problem-solving. As you work with your team you will want to think about all the different ways you can solve the problems. Make sure you pay attention to how your classmates solve the problems too, and try out some of their strategies later in the lesson.

Math Task

Launch – How Far Did She Run?



Read *How Far Did She Run?* using the Three Reads protocol.

1. **Teacher Read** to understand the context.
2. **Student Read Independently** to understand mathematics within the context.
3. **Reread** to **Think-Ink- Pair-Share** to list possible strategies you might use to solve the problem. Be prepared to share your strategies prior to solving the problem. ***Don't solve the problem, yet.***



Math Task

Lesson Launch



4 - 17. Each day Kamala walks and runs a total of 10 miles, but she often varies the intensity of her workout. Her Get-Fit device records the ratio of distance ran to distance walked, and her total miles, but it does not tell her the specific number of miles running versus the number of miles walking. Help Kamala determine the number of miles she ran for each of the four days listed below. Show your work and include any diagrams you used to determine your solutions.

- a. Monday: 3 to 2
- b. Tuesday: 1 to 5
- c. Wednesday: 8 to 5
- d. Thursday: 2 to 7

3 Reads Protocol:

1. **Teacher Read** to understand the context.
2. **Student Read Independently** to understand mathematics within the context.
3. **Students reread to Think-Ink-** possible strategies you might use to solve the problem. *Don't solve the problem, yet.*


Math Task

Explore – How Far Did She Run?



Think-Ink-*Pair-Share*

Your task:

1. **Please find** your name in the shared notes.
2. **Message** your partner and say hi. Then **set your status** to 
3. **Type** your strategy into the private message.
4. **Wait** to hit send until told to.
5. **Read** partners strategy and ask any clarifying questions on their strategy. You will be bringing both strategies to your team room.

Math Task

Collaborative Learning Agreements



We value sharing ideas, even when our ideas are unfinished.

We believe that listening to our classmates' ideas helps us understand math better.

We believe questions and discussion deepen mathematical understanding.

Math Task

Closure - Student Connections



Selected Team Presentations:

As teams share, think about the following questions.

How is this team's approach similar or different from your team's approach?

What questions do you have for the team?

Does their team's approach help clarify your own thinking?

Math Task

Closure – Team Discussion



As you **listened** to the teams share their strategies:

How does sequencing help students make their own connections to the learning goal?

How did the order lead to the storyline of the lesson and support students to be doers of math?



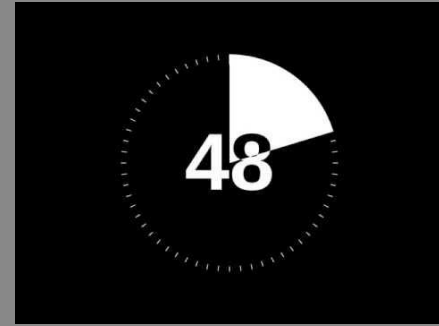
Using a waterfall, post your response in Public Chat when prompted.

Math Task Closure

Reflection on Learning Target and Success Criteria



Dyad



Learning Target:

Consider how a teacher's decisions and actions affect meaningful math discourse.

Success Criteria:

1. Name how the facilitator promoted discourse.
2. Name how the facilitator created an intellectually and emotionally safe environment.

Math Task

Lesson Debrief – Classroom Culture



Record your Rough Draft Thinking on the following prompts.

What role does discourse play in a collaborative learning environment?

How does discourse contribute to an effective learning environment?

Action Plan:

In the upper right dropdown menu, click on the **Action Plans**.

Select **Discourse Action Plan**.

Find the box titled **Day 1 Rough Draft Thinking**.

Click in the box to record your thoughts.

Agenda



Focus: Building on Discourse

- Icebreaker
- Math Task
- Best Practices
- Closure

Building on Discourse

Research on Discourse with Students



Successful or Superficial? Discussion in David Crane's Classroom

File Cabinet:

In the upper right dropdown menu, click on the **File Cabinet**.

Next choose **Building on Discourse**

Select the tab **Virtual**

Click on the document **Successful or Superficial? Discussion in David Crane's Classroom**

Building on Discourse

Successful or Superficial?



Silent Debate (3 min)

Your task: *Successful or Superficial?*

1. Please **find your private message** with your partner.
2. **Engage** in a Silent Debate regarding David Crane reading.
 - a. **Partner A** (first name alphabetically first) **will be pro:**
David Crane was successful.
 - b. **Partner B** (first name alphabetically second) **will be con:**
David Crane was superficial.

Agenda



Focus: Building on Discourse

- Icebreaker
- Math Task
- Best Practice
- Closure

Closure

What is Discourse?



Facilitate meaningful mathematical discourse

- + *Effective teaching of mathematics facilitates discourse among students to build shared understanding of mathematical ideas by analyzing and comparing student approaches and arguments.*
- + *Discourse is the mathematical communication that occurs in a classroom. Effective discourse happens when students articulate their own ideas and seriously consider their peers' mathematical perspectives as a way to construct mathematical understandings.*



(NCTM, *Principles to Actions*, 2014)

Closure

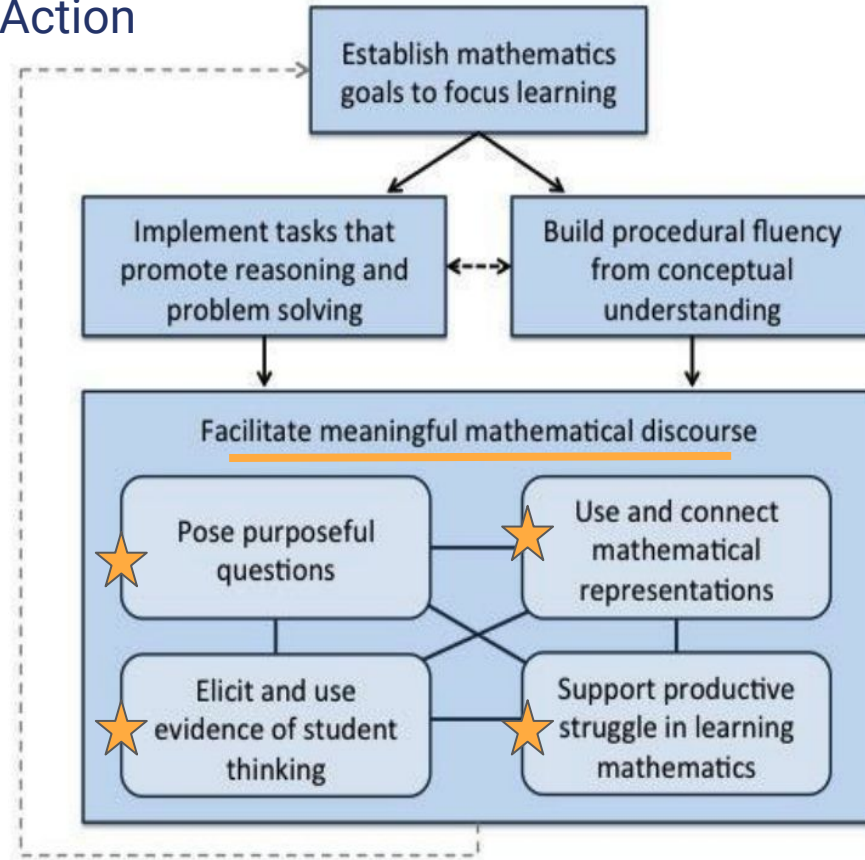
Effective Teaching Practices in Action



What do you notice?
What do you wonder?



Post in the Public Chat



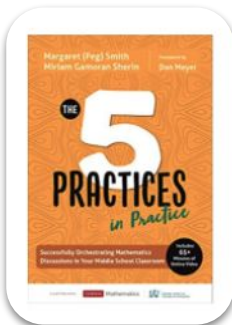
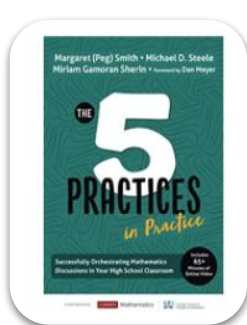
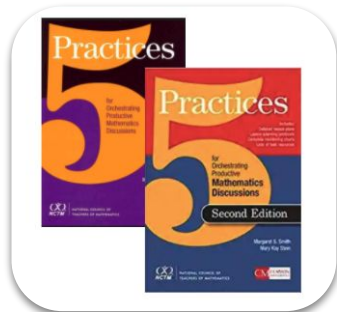
(Taking Action, NCTM, 2017)

Closure

5 Practices – Resources



What are the 5 Practices?



- + Anticipating
- + Monitoring
- + Selecting
- + Sequencing
- + Connecting

Closure

Session 1 Outcomes



Together we will:

- + Experience the Effective Mathematics Teaching Practices through the design of the *5 Practices*.
- + Better understand how facilitating meaningful mathematical discourse develops an equitable, student-centered classroom.

Closure



- + Parking Lot - will be addressed at end of Session 2
- + Attendance
 - Either scan the QR code
 - OR**
 - Enter passcode in the Portal
 - XXXXXX**
- + Homework prior to Session 2



If you didn't get a chance to preview your course specific lessons listed in Activity 1 of the On-Demand Module, please take time to review them. We will be using these in Session 2.

