Building on Instructional Practice: Focus on Discourse –Day 3

Rev 5/24/23 (ce)

Opening

Building on Discourse, Day 3

“She doesn’t talk too much. She lets us try instead.”

—Maddie B., 6th Grade Student

Sign in, and make a name tag.

Presenter’s choice: see agenda notes

CPM

More Math For More People

Building on Discourse
Day 3

name
name@cpm.org

Opening

Housekeeping

- Bathrooms
- 8:00 AM – 4:00 PM
- Breaks scheduled and as needed
- Lunch
- Parking Lot poster
- Supply/resource table

Opening

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.
+ Gain strategies to empower students to connect learning to a mathematical goal.
+ Gain strategies to address important elements of implementing mathematical discourse in the classroom.

Opening

Agenda

Morning

Opening

Math Task

5 Practices in Practice

Sharing Math Authority

Afternoon

Lunch

Dress Rehearsal

Building on Discourse

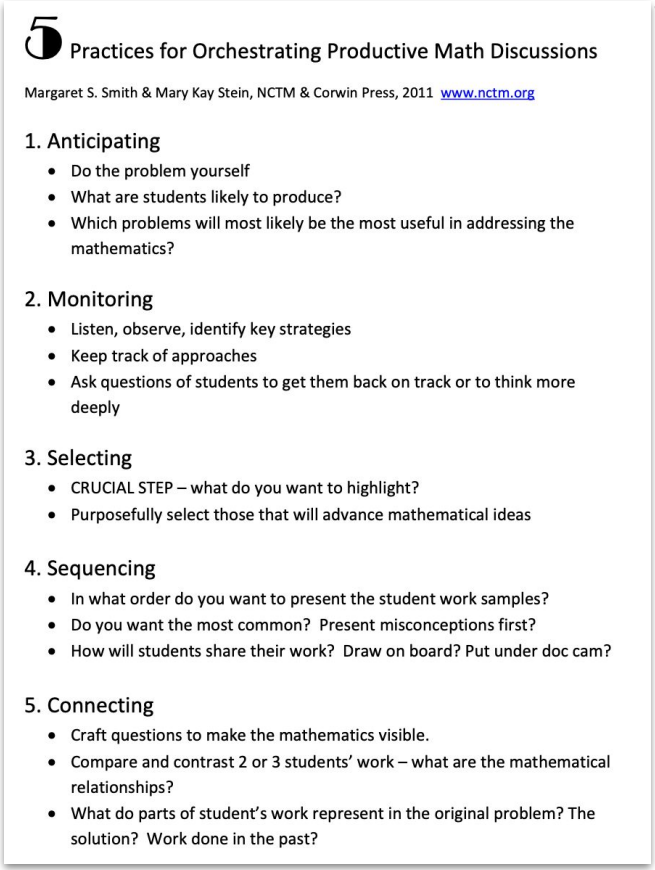
Session Closure

Opening

5 Practices

1. Anticipating
2. Monitoring
3. Selecting
4. Sequencing
5. **Connecting**

(Smith, Steele, & Sherin, 2019)



5 Practices for Orchestrating Productive Math Discussions

Margaret S. Smith & Mary Kay Stein, NCTM & Corwin Press, 2011 www.nctm.org

1. Anticipating
   - Do the problem yourself
   - What are students likely to produce?
   - Which problems will most likely be the most useful in addressing the mathematics?

2. Monitoring
   - Listen, observe, identify key strategies
   - Keep track of approaches
   - Ask questions of students to get them back on track or to think more deeply

3. Selecting
   - CRUCIAL STEP – what do you want to highlight?
   - Purposefully select those that will advance mathematical ideas

4. Sequencing
   - In what order do you want to present the student work samples?
   - Do you want the most common? Present misconceptions first?
   - How will students share their work? Draw on board? Put under doc cam?

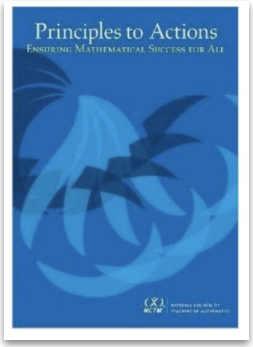
5. Connecting
   - Craft questions to make the mathematics visible.
   - Compare and contrast 2 or 3 students' work – what are the mathematical relationships?
   - What do parts of student's work represent in the original problem? The solution? Work done in the past?

Opening

Effective Mathematics Teaching Practices

Use and Connect Mathematical Representations

"Effective teaching of mathematics engages students in making connections among mathematical representations to deepen understanding of mathematics concepts and procedures and as tools for problem solving." (NCTM, 2014)



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.

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

Math Task

Focusing Learning

Learning Target:

Connect positive feedback strategies to meaningful discourse.

Math Task

Icebreaker

Individual Task:

1. List three things you do well.
2. What is something you do that makes you good at these things?

Math Task

Icebreaker

Team Discussion:

1. **Select** someone to start sharing out.
2. As a team, **actively listen** to your teammates as they **share one** strength and their reasoning.
3. After each team member shares their strength, **teammates restate** what they heard.

   Example: Jocelyn is good at making pie crusts because she learned from her grandmother and knows what it is supposed to look and feel like.

Math Task

Team Roles

Teacher

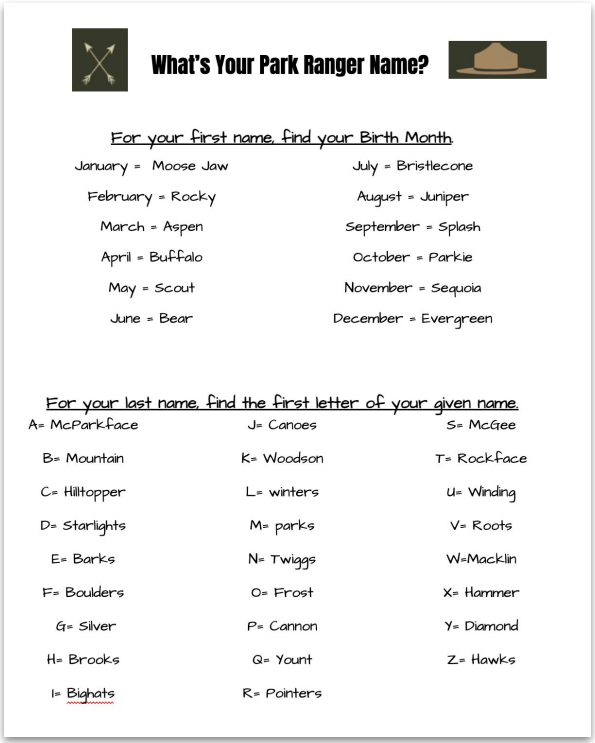
Use the resource page to find your park ranger name. Use these names to assign team roles by your park ranger last name.

Facilitator – Park Ranger name is first alphabetically.

Resource Manager – Park Ranger name is second.

Recorder/Reporter – Park Ranger name is third.

Task Manager – Park Ranger name is fourth.



What's Your Park Ranger Name?

For your first name, find your Birth Month.

January = Moose Jaw
February = Rocky
March = Aspen
April = Buffalo
May = Scout
June = Bear
July = Bristlecone
August = Juniper
September = Splash
October = Parkie
November = Sequoia
December = Evergreen

For your last name, find the first letter of your given name.

A= McParkface
B= Mountain
C= Hilltopper
D= Starlights
E= Barks
F= Boulders
G= Silver
H= Brooks
I= Bighats
J= Canoes
K= Woodson
L= winters
M= parks
N= Twiggs
O= Frost
P= Cannon
Q= Yount
R= Pointers
S= McGee
T= Rockface
U= Winding
V= Roots
W=Macklin
X= Hammer
Y= Diamond
Z= Hawks

Math Task

CC1

Lesson 5.3.4 – Problem 5-99

Student Math Goal:
Apply what you know about area to a complex shape.

Team Collaboration Goal:
Be willing to try multiple strategies, and critique the reasoning of others.

Math Task

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

Team role assignments

Facilitator: Determine how the group wants to read CC1 Lesson 5.3.4, problem 5-99.

Resource Manager: Get the resource page for your team.

Recorder/Reporter: When prompted, join the **Huddle**.

Task Manager: Make sure everyone has ebook access and materials.

Math Task

Launch – Park Problem

Student

What do you notice about the mowing? What do you wonder?

Math Task

Explore – CC1 Lesson 5.3.4

Student

Team Task:

1. As a team, **collaborate** to **solve** problem 5-99.
2. Your team will need to **find two different ways** to solve the problem.

Math Task

Modified Closure – Park Problem

Teammates Consult:

In your team, discuss the following questions. Be prepared to answer these questions later during the learning event.

What do we know about the area that needs to be mowed?

How do we know that?

Thank someone who helped you solve the problem.
Tell them what they did that was so helpful.

Math Task

Debrief Lesson

As a team:

1. **Listening Post** → Review the questions the presenter asked and the feedback that your team received.
2. **Analyze** how the presenter used the CANN protocol.

Math Task

Asset-Based Feedback – Assigning Competence

*"When teachers assign competence...they have **the power to shift students' perceptions** about what it means to learn math and who can be a successful math learner."*

Jilk, L., 2016. Supporting Teacher Noticing of Students' Mathematical Strengths. Mathematics Teacher Educator, 4(2), pp.188-199.

Math Task

Compliment vs Competence

Compliment	Assigning Competence (Intellectual Strength)
I really like your team's argument.	Your team found so much evidence, and that makes your argument strong.
Nice work connecting multiple representations.	Using your table to make a graph really helped you notice how the pattern grew.
Great teamwork!	Using the conversation starters helped you listen to all ideas and find a creative solution.

Math Task

Reflection on Learning Target and Success Criteria

Team Whiparound

Learning Target:

Connect positive feedback strategies to meaningful discourse.

Success Criteria:

1. Explain how assigning competence is different from other forms of positive feedback.
2. Describe how asset-based feedback contributes to a positive classroom culture.

Math Task

Action Plan

Record your **rough draft thinking** about the following prompts.

- *How did asset-based feedback make you feel? What impact did it have on your learning?*
- *How does asset-based feedback connect to the five practices and classroom culture?*
- *How could you use asset-based feedback in your classroom?*

Action Plan (Portal):
In the upper right dropdown menu, click on the **Action Plans**.
Select **Discourse Action Plan.**
Find the box titled **Day 3 Rough Draft Thinking.**
Click in the box to record your thoughts.

The 5 Practices in Practice

Focusing Learning

Learning Target:

Apply the five practices to plan a connection discussion.

The 5 Practices in Practice

CC1 5-99 Lesson Goal

Learning Goal:

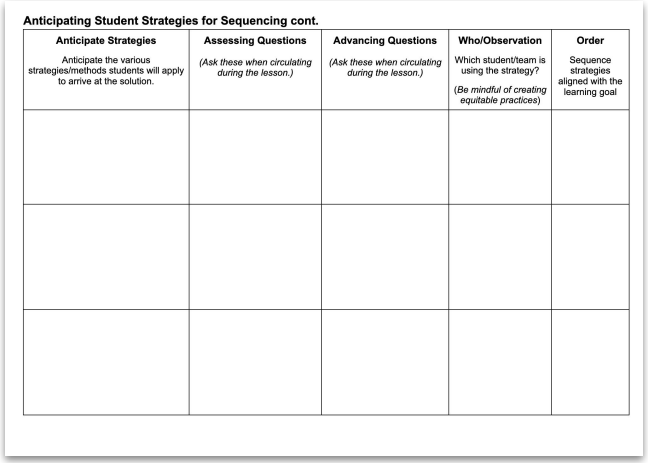
Students will understand that a given area stays the same even if it is arranged in different ways. Irregular shapes can be composed of regular shapes or could be decomposed into regular shapes. Looking for regularity allows us to apply area formulas.

The 5 Practices in Practice

Anticipate What We Might See in Problem 5-99

Team Task:

1. As a team, **think** about additional ways that your students could have solved the problem.
2. On the monitoring chart, **fill** out the anticipated student responses that your team brainstormed.
3. As a team, **create** assessing and advancing questions that you might ask students during the lesson.



Anticipating Student Strategies for Sequencing cont.

Anticipate Strategies Anticipate the various strategies/methods students will apply to arrive at the solution.	**Assessing Questions** *(Ask these when circulating during the lesson.)*	**Advancing Questions** *(Ask these when circulating during the lesson.)*	**Who/Observation** Which student/team is using the strategy? *(Be mindful of creating equitable practices)*	**Order** Sequence strategies aligned with the learning goal

The 5 Practices in Practice

Monitor

Hosted Gallery Walk

Team Task:

As a team, circulate the room to see the variety of strategies.

a. Take notes on your monitoring chart

b. Consider how you might select and sequence the work.

Facilitator: Stay to explain your team's work. Answer questions as needed.

The 5 Practices in Practice

Select and Sequence

Team Task:

As a team, construct a potential sequence for the student connection part of the math task. Write down your order on your monitoring chart.

a. Which would you select?

b. What ideas do you want to share from that work?

c. Whose work do you want to share first? second? etc?

d. How can students make the connections?

The 5 Practices in Practice

Reflection on Learning Target and Success Criteria

Team Whiparound

Learning Target:

Apply the *5 Practices* to plan a connection discussion.

Success Criteria:

1. Select and sequence student work.
2. Consider the mathematical story you want to co-create with students.

The 5 Practices in Practice

Reflection

Walk and Talk:

Reflect on your experience using the *5 Practices*.

Which practices were easiest for you? Which were hardest?

What are you excited about using with your students?

Take a break

Sharing Math Authority

Focusing Learning

Learning Target:

Construct an understanding of shared math authority and how it contributes to a positive classroom culture.

Sharing Math Authority

Classroom Culture

What does it mean to share math authority?

How does sharing math authority affect your classroom culture?

Sharing Math Authority

Tips for Sharing Math Authority

Jigsaw: Four Corners

Your Task:

Go to your assigned corner. Each group send someone to receive your assigned tip for sharing math authority. You will need to:

- **Create** two skits.
    a. One skit shows an example.
    b. One skit shows a non-example.
    c. Share the tip at some point in the skit.
    d. Skits should be **4-5 minutes total.**

Sharing Math Authority

Team Skits

Team Presentations:

1. **As teams present**, think about the following questions.
    a. How did the teacher(s) share math authority?
    b. How were the SEAD themes evident in this skit?

2. **After the team presents**, take a moment to reflect and collect notes on the tip modeled in the skit.

Sharing Math Authority

Reflection on Learning Target and Success Criteria

Team Whiparound

Learning Target:

Construct an understanding of shared math authority and how it contributes to a positive classroom culture.

Success Criteria:

1. Explain shared math authority and how it impacts classroom culture.
2. Name strategies to help share math authority.

Sharing Math Authority

Action Plan

Teacher

Record some thoughts in your rough draft thinking space.

How do you currently share math authority with your students?

What shifts might you make to share math authority?

Action Plan (Portal):

In the upper right dropdown menu, click on the **Action Plans**.
Select **Discourse Action Plan.**
Find the box titled **Day 3 Rough Draft Thinking.**
Click in the box to record your thoughts.

Lunch Time

Dress Rehearsal

Focusing Learning

Learning Target:

Synthesize your understanding of the *5 Practices* by implementing teacher moves to support one of the *5 Practices*.

Dress Rehearsal

Microteaching

Microteaching is a professional learning strategy in which teachers try out a new teacher move on a group of colleagues before trying it with students.

Dress Rehearsal

Microteaching

What might microteaching rounds look like?

1. Practice using **teacher moves that promote discourse.**
2. Practice asking both **assessing and advancing questions.**
3. Practice **connecting student solutions** in a whole-class discussion.
4. Practice **asset-based feedback.**
5. **Any other teacher moves** you would like to try out**.**

Dress Rehearsal

Roles for Microteaching

Microteaching Team Roles:

- **Teacher/Co-Teacher** - These team members try out the teacher moves to support your chosen practice.
- **Listening Post** - These team members collect data to reveal the impact of the teacher moves.

You may combine these roles if each team member wants to practice with a team.

Other Teams:

- **Student Lens** - Experience the teacher moves being practiced as a student.
- **Provide Feedback** - After the experience, provide asset based feedback on a sticky note(s). **Recorder/Reporter** gives the sticky note to the microteaching team.

Dress Rehearsal

Planning for Microteaching

Team Task:

1. **Use** your team's lesson from Day 1.
2. **Select one** of the five practices *(monitoring, selecting, sequencing, or connecting)*.
3. **Pick** teacher moves.
    a. Practice using **teacher moves that promote discourse.**
    b. Practice asking both **assessing and advancing questions.**
    c. Practice **connecting student solutions** in a whole-class discussion.
    d. Practice **asset-based feedback.**
    e. **Any other teacher moves** you would like to try out**.**
4. **Decide** what type of feedback you would like to receive.

Dress Rehearsal

Microteaching in Practice

Microteaching Team Roles:

- **Teacher/Co-Teacher** - These team members try out the teacher moves to support your chosen practice.
- **Listening Post** - These team members collect data to reveal the impact of the teacher moves.

You may combine these roles if each team member wants to practice with a team.

Other Teams:

- **Student Lens** - Experience the teacher moves being practiced as a student.
- **Provide Feedback** - After the experience, provide asset based feedback on a sticky note(s). **Recorder/Reporter** gives the sticky note to the microteaching team.

Dress Rehearsal

Reflection on Learning Target and Success Criteria

Team Whiparound

Learning Target:

Synthesize your understanding of the *5 Practices* by implementing teacher moves to support one of the *5 Practices*.

Success Criteria:

1. Reflect on feedback from other teams and revise your planned teacher moves.
2. Increase your ability to implement one of the five practices in your classroom.

Dress Rehearsal

Action Plan

Title: Teacher moves to promote mathematical discourse

I will implement the 5 Practices to create discourse in an equitable, student-centered way by _____.

Action Plan (Portal):

In the upper right dropdown menu, click on the **Action Plans**.
Select **Discourse Action Plan.**
Find the box titled ***"Teacher moves to promote mathematical discourse."***
Click in the box to record your thoughts.

Take a break

Building on Discourse

How Many?

Teacher

Using this photo, discuss with your team the following question.

How Many?

Building on Discourse

Choice Board

Your Task:

Select one or two of the following items to work on during this time.

Plan a second lesson using all five practices.

Adjust a lesson to incorporate parts of the five practices.

Build parts of the five practices **into daily practices.**

Enhance questions for a lesson to include more assessing and advancing questions.

Be prepared to share with the group what you intentionally worked on.

Building on Discourse

Choice Board

Quick Pitch:

Each person shares with the team what they worked on and why they chose it. Feel free to connect the work to one of these questions.

How did you create space for sharing math authority with your students?

What parts from the five practices did you incorporate into your lesson?

How did you adjust to add actions that promote SEAD themes?

Closure

What have we learned?

Closure

Focusing Learning

Learning Target:

Synthesize your understanding of implementing meaningful mathematical discourse.

Closure

Implementing Discourse

Create a concept map that models a support structure for meaningful mathematical discourse.

In your concept map, **make connections between**:

- Effective Mathematics Teaching Practices
- SEAD Themes
- *5 Practices*

Closure

Implementing Discourse

Teammates Consult

Team Task:

1. **Place** all the cards in the middle of your team.
2. **Independently read** through all the cards.
    a. What are the cards referring to?
    b. How would you organize them?
    c. How do they connect to discourse and to each other?
3. **Discuss** your thoughts from your reading with your team.
4. **Create** a concept map that represents these connections.

Closure

Connecting

Selected Team Presentations:

As teams share, think about the following questions.

How did this team envision the connections?

How is this similar to your understanding?

How does this add on to your understanding?

Closure

Reflection on Learning Target and Success Criteria

Learning Target:

Synthesize your understanding of implementing meaningful mathematical discourse.

Success Criteria:

1. Create a concept map that makes connections between the SEAD Themes, Effective Mathematics Teaching Practices, and *The 5 Practices*.
2. Connect strategies to promote discourse, and formulate a plan for implementation in your classroom on a daily basis.

Closure

Today

0. Selecting a rich task and writing a lesson goal
1. Anticipating
2. Monitoring
3. Selecting
4. Sequencing
5. **Connecting**
   - **Connecting student work to the goals of the lesson**
   - **Connecting different solutions to each other**

Learning Event Module in the Portal:
Open up the learning event module.
Scroll down to Day 3.
Open Day 3 Feedback.
Complete the Feedback form.

(Smith, Steele, & Sherin, 2019)

Closure

Reflecting on the *5 Practices*

Carousel: Station Rotation

Team Task:

1. **Select one or two key** questions from the poster.
2. **Brainstorm** teacher moves, actions, and wonders that could support completing the practice.
3. **Write** your responses on the poster for others to view.
4. **Read and review** other teams' suggestions.

Closure

Classroom Practice Reflection

Proximity Partner

1. **Find** your proximity partner by standing up and touching two chairs from different tables and two non-adjacent walls.
2. **Engage in a conversation** with your partner around the following sentence frames.

As I plan for discourse, I will consider _____.

A strength students bring to learning is _____. I can leverage this by _____.

Students might struggle with _____, but I can _____.

Agency | Belonging | Discourse | Identity

Closure

Action Plan

Teacher

“She doesn’t talk too much. She lets us try instead.”

—Maddie B., 6th Grade Student

Revisit each of the action items to **revise and edit** your connections to the *5 Practices*.

How do you see this connecting to your daily practice?

What parts can you add to your current practice daily?

Action Plan (Portal):

In the upper right dropdown menu, click on the **Action Plans**.
Select **Discourse Action Plan.**
Click in the box to record your thoughts.

Closure

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.
+ Gain strategies to empower students to connect learning to a mathematical goal.
+ Gain strategies to address important elements of implementing mathematical discourse in the classroom.

Closure

- Parking Lot
- Attendance

  Either scan the QR code

  OR

  Enter passcode in the portal

  XXXXXX

- Suggested Next Steps:
  - Implement your action plan
  - Reach out and connect to a peer and debrief your *5 Practices* Lesson

CPM
More Math For More People

Text Font: Roboto

Title Font Size: 24

Subtitle Font Size: 18

Color coding:

- **Teacher Lens**: 006DAB
- **Learning Log**: 006DAB
- **Student Lens**: 41AD49
- **Housekeeping**: 233368
- **Content Module**: 006D41
- **Thread**: 006D41

Text should be primarily black or dark blue (#233368)

Note: Drop zones of icons on layouts are not moveable.

HOUSEKEEPING

ANCHOR PAGE

WELCOME

PUZZLE

TEAM GOAL

TEACHER LENS

LEARNING LOG

THREAD

CONTENT MODULE

MATH GOAL

STUDENT LENS

EQUITY LENS

ASSESSMENT

PRODUCTIVE STRUGGLE

RESEARCH PILLARS

MSP

COLLABORATIVE LEARNING

PBL

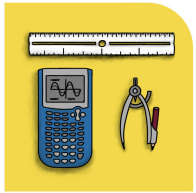
STUDY TEAMS

LEARNING TARGET

TASK CARD

TEAM ROLES ALL

RESOURCE MANAGER



TASK MANAGER

REPORTER RECORDER

FACILITATOR

IMPLEMENTATION ACTION PLAN

TEAM ROOMS

IMPLEMENTATION PROGRESS TOOL

STTS