



Foundations for *Inspiring Connections* - Session 8

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Welcome!

Foundations for Inspiring Connections - Session 8



What should I do before we get started?

- + Please unmute to respond to the door question - What is your favorite summer activity?
- + Review the Virtual Routines.

Virtual Routines

- Join with microphone.
- Private chat facilitator for individual support.
- Share your ideas.

See

Fractal (Beautiful Chaos) *Teacher monitoring*

teamwork / collaboration

mistakes

movement

engagement

fun variety of activities

VRT (visibly random teams) *SUCCESS*

Hear

conversations

Student voices

Suggestions

math arguments (respectfully)

risk taking

Talk Moves

Question / Question

Student Justifications

Feel

Safe

it's okay to have a lot of different ideas

hot (lots of thinking)

productive

engaging

Challenging

productive struggle

math authority

Love!

Reflection

Self-reflection

Peer-reflection

Teacher-reflection

10/5

Visible Random Teams

Procedures in place

VNPS all over

Mixed space learning

equitable accommodations

movement

Look

learning engaged

productive struggle

collaborative student-centered

Sound

noisy (appropriate)

risk taking

respectful

co-creating

asking questions

Math rich language

shared math authority

Feel

inclusive / community

safe / confident

individual responsibility

collaborative

valued

everyone is seen & heard

growth mindset

excitement

proud

productive

I like your strategy

the students in your classroom need to see the visible random teams

the visible random teams are a great strategy

the visible random teams are a great strategy

the visible random teams are a great strategy

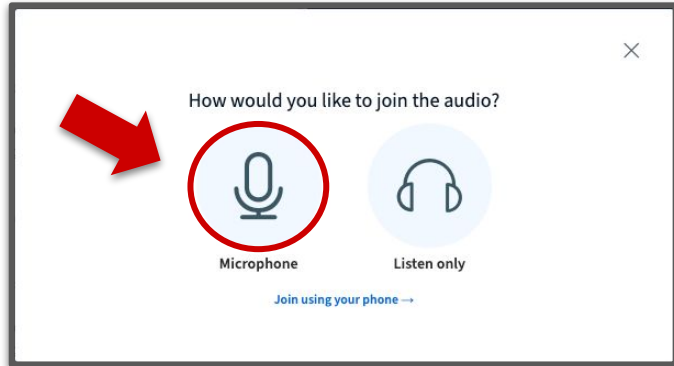
the visible random teams are a great strategy

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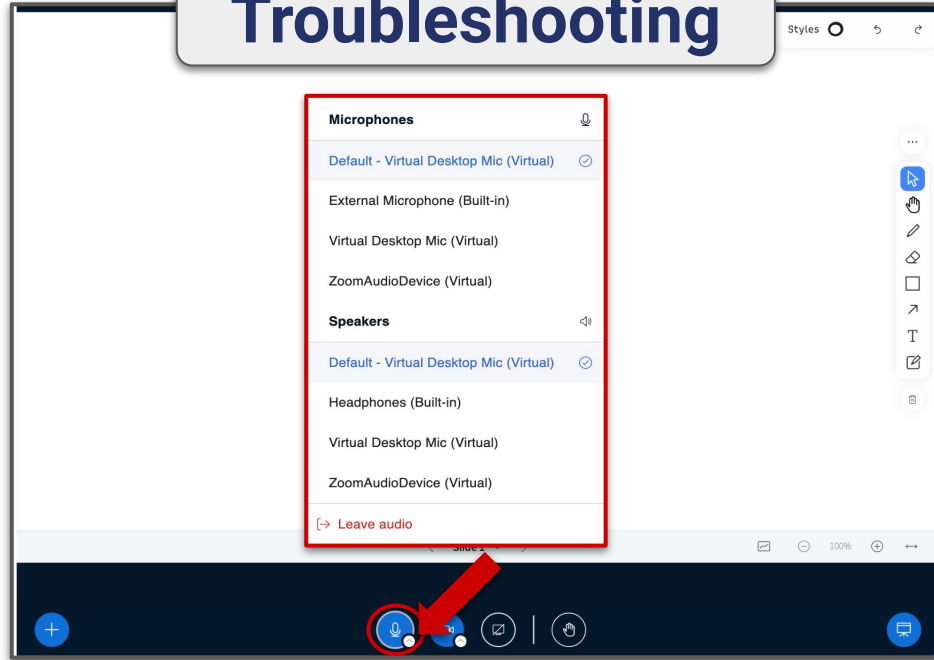
Tech Tip



Audio



Troubleshooting



Opening

Outcomes



Together we will...

become familiar with the CPM Mixed, Spaced Practice research pillar.

learn how the design of *Inspiring Connections* supports and develops mixed, spaced practice.

explore and experience *Inspiring Connections*.

reflect on current practices and assessment beliefs to develop a plan for the implementation of *Inspiring Connections*.

Opening

Session 8



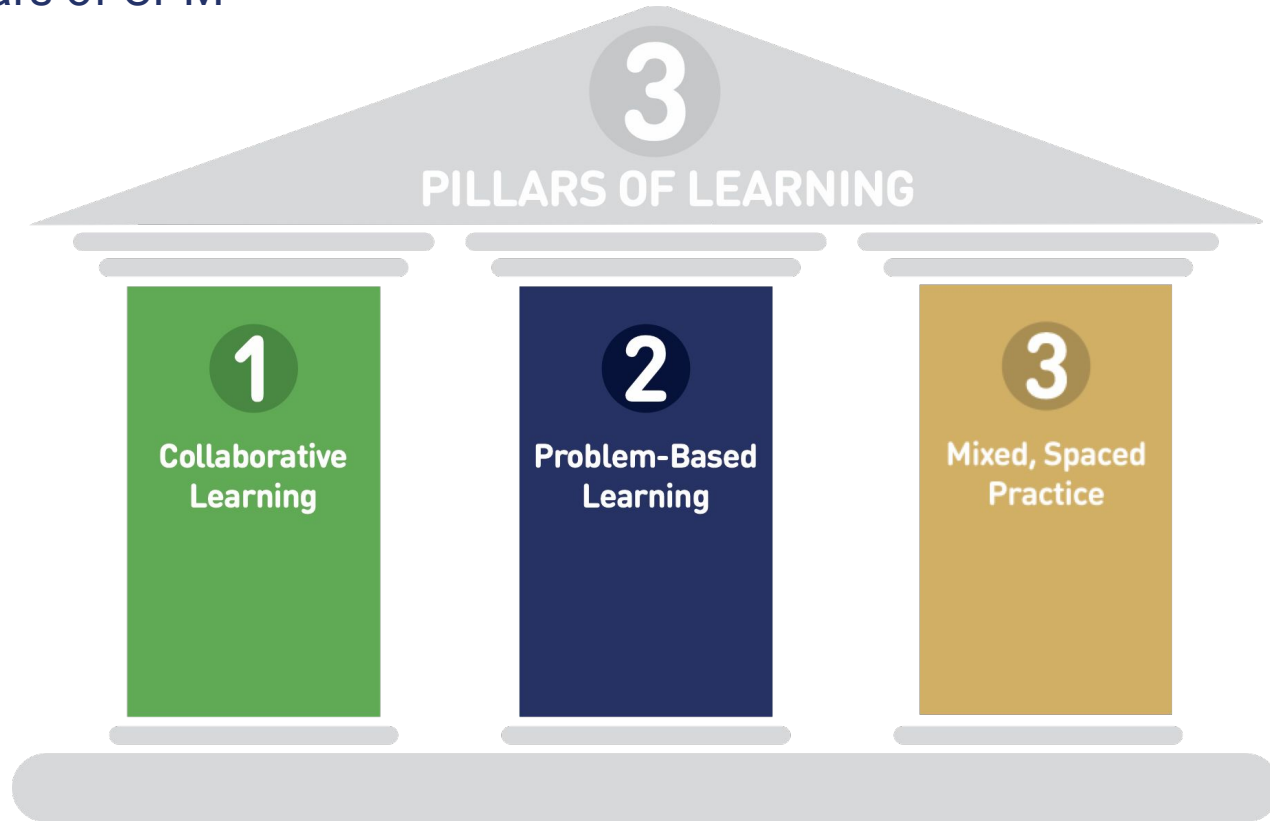
Focus: Mixed, Spaced Practice

- + **Opening & Icebreaker**
- + Assessment Beliefs
- + Mixed, Spaced Practice
- + Summative Assessment
- + Closure

Learning Target: I can use multiple strategies to get to know my students.

Opening

Three Pillars of CPM



Guiding Principles

CPM's Guiding Principles



Students deepen their mathematical understanding when they are engaged with concepts over time.



Students have significantly better retention of mathematics when concepts are grounded in context.



Students' involvement in effective study teams increases their ability to learn mathematics.



Effective study teams are guided, supported, and summarized by a reflective, knowledgeable teacher.



Assessing what students understand requires more than one method and more than one opportunity.



When students and stakeholders embrace a growth mindset, they understand that mastery takes time, effort, and support.

Opening

Working Agreements



- + Be willing to take **risks**.
- + Have a **visionary** mindset.
- + Stay **engaged**.
- + Explore and reflect on our **beliefs**.
- + Give **grace** to others and ourselves.

Change takes time, effort, and support!

Set your status to thumbs up if you are ready to begin.



Opening Icebreaker



Team Task:

- + Introduce yourself and assign team roles.
- + Take turns sharing your questions.
- + With remaining time, answer one another's door questions or write additional questions as a team.

Door Questions

Representative

Investigator

Coordinator

Organizer

Agenda

Session 8



Focus: Mixed, Spaced Practice

- + Opening & Icebreaker
- + **Assessment Beliefs**
- + Mixed, Spaced Practice
- + Summative Assessment
- + Closure

Learning Target: I can identify an assessment belief that I would like to be more intentional with in my practice.

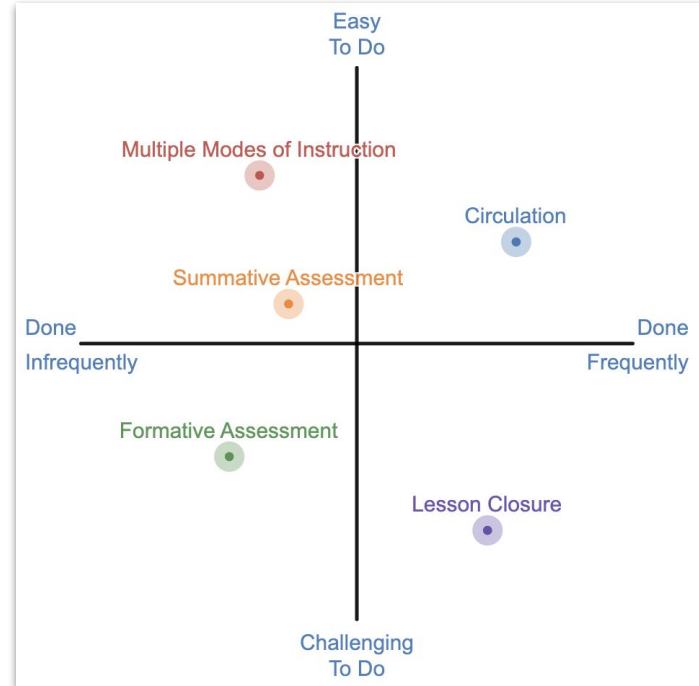
Assessment Beliefs

Individual Sort



Your Task

- + Open the Desmos link.
- + Complete screens 1 and 2.



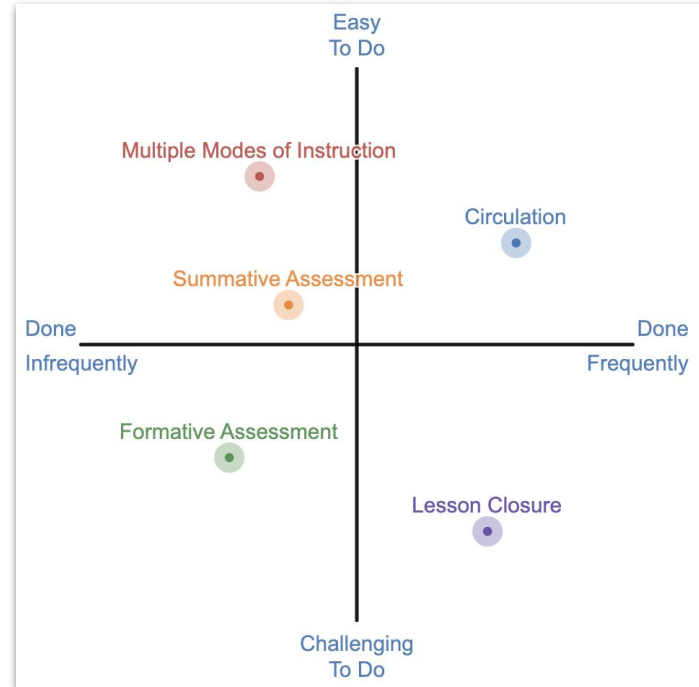
Assessment Beliefs

Team Sort



Your Task

- + Complete screen 3 of the Desmos activity.



Assessment Beliefs

Beliefs about Mathematics Assessment



“It is important to note that these beliefs should not be viewed as good or bad. Instead, beliefs should be understood as productive when they support effective teaching and learning or unproductive when they limit student access to important mathematics content and practices.”

- NCTM’s *Principles to Actions*, 91

Assessment Beliefs

Beliefs about Mathematics Assessment



		PRODUCTIVE BELIEF	UNPRODUCTIVE BELIEF
N C T M	1	The primary purpose of assessment is to inform and improve the teaching and learning of mathematics.	The primary purpose of assessment is accountability for students through report card marks or grades.
	2	Assessment is an ongoing process that is embedded in instruction to support student learning and make adjustments to instruction.	Assessment in the classroom is an interruption of the instructional process.
	3	Mathematical understanding and processes can be measured through the use of a variety of assessment strategies and tasks.	Only multiple choice and other “objective” paper-and-pencil tests can measure mathematical knowledge reliably and accurately.
	4	Multiple data sources are needed to provide an accurate picture of teacher and student performance.	A single assessment can be used to make important decisions about students and teachers.
	5	Assessment is a process that should help students become better judges of their own work, assist them in recognizing high-quality work when they produce it, and support them in using evidence to advance their own learning.	Assessment is something that is done to students.
	6	Ongoing review and distributed practice within effective instruction are productive test preparation strategies.	Stopping teaching to review and take practice tests improves students’ performance on high-stakes tests.

Assessment Beliefs

CPM's Assessment Position Paper



In addition, CPM would add the following:

C P M	7	Authentic assessment means assessing in a manner that mirrors the way the students have learned, and focusing on what the students know, rather than what the students do not know.	Authentic assessment means asking students “real world” problems to solve.
	8	Assessment, as with the learning, should focus on the big ideas and the connections to assess for understanding, and not on the fine grain-sized skills.	It is important to assess students multiple times on a single skill or concept, asking every variation of the skill.
	9	Assessment and teaching should be seamlessly interwoven, and time should be spent on both. Because of the lack of time most teachers have, it is important to assess wisely, and use the supports that are in place.	There is not enough time to develop good assessments and good lessons, so the little time there is should be spent on developing lessons.
	10	Assessment is the process of understanding student learning, and grading is evaluating that understanding. The bulk of the teacher’s time should be spent on assessing rather than grading.	Assessment and grading are one and the same, so to assess students, a teacher must spend time grading student papers.

Agenda

Session 8



Focus: Mixed, Spaced Practice

- + Opening & Icebreaker
- + Assessment Beliefs
- + **Mixed, Spaced Practice**
- + Summative Assessment
- + Closure

Learning Target: I can access *Inspiring Connections* resources that support Mixed, Spaced Practice.

Mixed, Spaced Practice

Self-Assessment



Assessment is a process that should help students become better judges of their own work, assist them in recognizing high-quality work when they produce it, and support them in using evidence to advance their own learning.

- NCTM's Productive Assessment Beliefs

Mixed, Spaced Practice

Notice and Wonder



☐ = Cluster is covered in chapter

✓ = Cluster appears on assessment

Your Task (4 min):

- + Examine the Cluster Overview and Chapter 1 Closure Reflection & Practice of the Mathematician's Notebook for your course.
- + *What are the connections to Mixed, Spaced Practice & the Assessment Beliefs?*

Reflection & Practice

The end of a chapter is a good time to reflect on what you have accomplished so far. Take some time now to review your progress on the Chapter 1 Learning Targets listed at the beginning of the chapter. Then use the following table to support your learning.

Closure Problem (Cluster)	Learning Targets	Need Help?	More Practice
CU 1-127 (previous course)	I can round decimals to a given place value.	<ul style="list-style-type: none"> • Lessons 1.1.1, 1.1.2, 1.3.3 • Place Value Methods & Meanings (1.1.2) • Rounding Methods & Meanings (1.1.4) 	<ul style="list-style-type: none"> • Problems 1-16, 1-36
CU 1-128 (EE.A)	I can multiply using the area model.	<ul style="list-style-type: none"> • Lesson 0.1.5 • Multiplication Using Area Models Methods & Meanings (0.1.6) 	<ul style="list-style-type: none"> • Problems 0-39, 0-46, 1-18, 1-45, 1-64, 1-73
CU 1-129 (EE.A)	I can write a numerical expression. I can write an expression to represent an arrangement of objects.	<ul style="list-style-type: none"> • Lessons 0.1.2, 0.1.3, 1.3.1, 1.3.2, 1.3.4 	<ul style="list-style-type: none"> • Problems 0-23, 0-25, 0-33, 0-52, 1-7, 1-32, 1-61, 1-85, 1-92, 1-93, 1-106, 1-122
CU 1-130 (NS.C)	I can position whole numbers, mixed numbers, fractions greater than one, and decimals on a horizontal number line.	<ul style="list-style-type: none"> • Lessons 1.1.1, 1.1.2 	<ul style="list-style-type: none"> • Problems 1-4, 1-14, 1-15, 1-17, 1-27, 1-37, 1-63, 1-72, 1-80
CU 1-132	I can read and create a bar graph.	<ul style="list-style-type: none"> • Lessons 0.1.1, 1.1.4, 1.1.5, 1.1.8 	<ul style="list-style-type: none"> • Problems 0-6, 0-7, 0-27, 0-45, 1-8, 1-28, 1-34, 1-35, 1-41, 1-42, 1-44, 1-52, 1-53, 1-63, 1-71, 1-107, 1-108, 1-123
CU 1-134 (SPA and SP.B)	I can read and analyze parts of a histogram. I can use a histogram to display frequency. I can create a dot plot. I can report the number of observations in a data set.	<ul style="list-style-type: none"> • Data Displays Methods & Meanings (1.2.1) 	
CU 1-135 (G.A)	I can calculate the area of a figure made of square units. I can calculate the perimeter of a figure. I can calculate the area of a polygon by summing the areas of its parts.	<ul style="list-style-type: none"> • Lessons 1.2.1, 1.2.2, 1.2.3 • Perimeter and Area Methods & Meanings (1.2.2) • Rectangles and Square Units Methods & Meanings (1.2.3) • Lesson 1.2.2 Reflection Journal: Square Units and Areas 	<ul style="list-style-type: none"> • Problems 1-42, 1-68, 1-69, 1-70, 1-77, 1-78, 1-79, 1-87, 1-96, 1-96

EE.A Apply and extend previous understandings of arithmetic to algebraic expressions.

NS.C Apply and extend previous understandings of numbers to the system of rational numbers.

SPA Develop understanding of statistical variability.

SP.B Summarize and describe distributions.

G.A Solve real-world and mathematical problems involving area, surface area, and volume.



Mixed, Spaced Practice

Notice and Wonder



Team Task (8 min):

- + *How do(es) _____ connect to Mixed, Spaced Practice research and NCTM's productive Assessment Beliefs?*
- + *How will you use _____ in your classroom?*

**Reflection &
Practice**

**Assessment
Clusters**

**Learning
Targets**



p.43

Mixed, Spaced Practice

Self-Assessment



Authors' Vision

Inspiring Connections features many opportunities for students to self assess.

Assessment

Reflection & Practice

Reflection & Practice Answers

Learning Targets

Reflection & Goal Journals

Assessment Clusters



Mixed, Spaced Practice

Reflection

Learning Target:

I can access *IC* resources that support Mixed, Spaced Practice.

What do you want to remember about...

- + **Reflection & Practice**
- + **Individual Assessments**
- + **Learning Targets**

How does _____ connect to Mixed, Spaced Practice?



p.43

Add questions, comments, good ideas to share, and burning issues to the Parking Lot!

Screen Break

Take a break and walk away from the computer.



Agenda

Session 8



Focus: Mixed, Spaced Practice

- + Opening & Icebreaker
- + Assessment Beliefs
- + Mixed, Spaced Practice
- + **Summative Assessment**
- + Closure

Learning Target: I can access *Inspiring Connections* resources that support Mixed, Spaced Practice.

Mixed, Spaced Practice

CPM's Principles of Assessment



The CPM materials have been designed to support **mastery over time** through a **student-centered, problem-based** course, and this approach supports students' different learning styles. But when changing the materials and changing the methodology, teachers must also change their assessment practices.

- CPM's Position Paper on Assessment

Mixed, Spaced Practice

CPM's Principles of Assessment



- 1 Teachers need to be involved in the crafting of assessments.
- 2 Teachers need to read and work through all test problems.
- 3 Students should be assessed only on content with which they have been meaningfully engaged.
- 4 Formative assessment is a learning experience for students and teachers.
- 5 While teachers are required to evaluate and assign grades, grading should be flexible.

Mixed, Spaced Practice

Individual Assessment - Teacher



[All sample tests are based on CPM's philosophy that students should not be assessed until after they have had time to meaningfully engage with the material in both the lessons and in the Reflection & Practice. The following table shows where the concepts on this sample test were introduced and practiced. You know what concepts your students have meaningfully engaged with and may now be ready to be assessed on. If you choose to create your own test rather than use this sample test, making a similar table can help you decide what types of problems to include.]

Test Question	Cluster	Concept Introduced	Engagement of Concept in Reflection & Practice
1	7.EE.A	Lesson 6.2.1	Problems 6-55, 6-56, 6-66, 6-67, 6-77, 6-87, 6-88, 6-90, 6-100, 6-111, 6-117, 6-126, CU 6-129, CU 6-130
2	7.EE.A	Lesson 6.2.2	Problems 6-55, 6-56, 6-66, 6-67, 6-77, 6-87, 6-88, 6-90, 6-100, 6-111, 6-117, 6-126, CU 6-129, CU 6-130
3	7.NS.A	Lesson 5.2.3	Problems 5-74, 5-75, 5-76, 5-85, CU5-96, 6-9, 6-28, 6-37, 6-45, 6-69, 6-91, 6-101, 6-127, CU 6-131, CU 6-132, CU 6-133
4	7.NS.A	Lesson 5.2.3	Problems 5-74, 5-75, 5-76, 5-85, CU5-96, 6-9, 6-28, 6-37, 6-45, 6-69, 6-91, 6-101, 6-127, CU 6-131, CU 6-132, CU 6-133
5	7.SP.B	Lesson 6.1.1	Problems 6-6, 6-7, 6-15, 6-16, 6-25, 6-26, 6-35, 6-43, 6-44, 6-59, 6-80, 6-118, CU 6-134, CU 6-135
6	7.SP.B	Lesson 6.1.1	Problems 6-6, 6-7, 6-15, 6-16, 6-25, 6-26, 6-35, 6-43, 6-44, 6-59, 6-80, 6-118, CU 6-134, CU 6-135
7	7.SP.C	Lesson 5.2.1	Problems 5-17, 5-18, 5-19, 5-27, 5-28, 5-35, 5-43, 5-44, 5-51, 5-52, 5-72, 5-79, 6-29, 6-102, 6-119, CU 6-136, CU 6-137
8	7.SP.C	Lesson 5.1.6	Problems 5-17, 5-18, 5-19, 5-27, 5-28, 5-35, 5-43, 5-44, 5-51, 5-52, 5-72, 5-79, 6-29, 6-102, 6-119, CU 6-136, CU 6-137

Mixed, Spaced Practice

Mixed, Spaced Practice



How is mixed, spaced practice integrated into the curriculum?

- + Chapter Sections
- + Problems in the Lessons
- + Reflection & Goal Journals
- + Reflection & Practice
- + Learning Targets
- + Chapter Closure
- + Individual Assessment
- + Team Challenges
- + Threads within Courses (Assessment Clusters)
- + Vertical Threads through Courses

Mixed, Spaced Practice

Resources to Guide Summative Assessments



Reflection & Practice Problems

Checking for Understanding (Closure Problems)

Chapter Closure Authors' Vision

Teacher Version of Sample Assessment



Mixed, Spaced Practice

Information to Support Building Summative Assessments



Suggested Breakdown for Individual Tests:

- + current chapter ($\approx 40\%$)
- + previous chapters ($\approx 60\%$)

Authors' Vision

By the end of Chapter 1, students have had sufficient opportunity to meaningfully engage with the following topics.

- **Previous Coursework**
 - Write portions as percents, fractions, and decimals. (6th grade)
 - Perform operations with rational numbers. (7th grade)
 - Solve equations in one variable. (7th grade)
- **Scatter Plots**
 - Create scatter plots. (SP.A)
 - Use a scatter plot to make predictions. (SP.A)
 - Draw trend lines on a scatter plot. (SP.A)
- **Rigid Transformations**
 - Describe how to move a figure on the coordinate plane. (G.A)
- **Proportional Relationships**
 - Graph a proportional relationship and interpret the unit rate from a graph. (EE.B)
 - Compare proportional relationships. (EE.B)

Students' current understanding of these topics can be assessed using the [Sample Assessments](#). Both the Team Challenge and the Individual Test are appropriate for this. Read more about assessments in the [Teacher Materials](#).

Mixed, Spaced Practice

Tools & Topics



Spotlight
Venues, Teams, etc.

Big Picture
Growing From, Working
On, Growing To

Need Help
Methods & Meanings

Tools and Topics *Inspiring Connections Course 1, Chapter 1*

Spotlight On: Teams

The OPM curriculum is guided by the philosophy that students need to be active participants in developing their own mathematical understanding. The team structure creates a setting in which students are continuously in the presence of others with whom they can share ideas and articulate their thinking. In teams, students can take risks, where it may be easier than in a large class setting. Students communicate with teammates who may see things differently, giving them opportunities to gain new perspectives, discover new connections between ideas, and practice justifying their reasoning.

The Big Picture

Growing From

Fraction operations;
Representing and interpreting line plots;

Writing numerical expressions.

Working On

Number operations;
Analyzing data;

Writing expressions.

Growing To

Comparing positive and negative numbers;
Absolute value;
Measures of center and spread;
Evaluating expressions.

Need Help?

Methods & Meanings boxes are included in the Mathematician's Notebook as reference.

1.2.1: Displays of Data

1.2.2: Perimeter and Area

1.2.3: Area

1.2.4: Area, Rectangles, and Square Units

1.3.1: Base and Height of a Rectangle

1.3.4: Adding and Subtracting Multi-Digit Decimals

Words of Wisdom

"If you want to lift yourself up, lift up someone else."

— Booker T. Washington

Current Topics

This chapter sets the stage for the exciting mathematical journey ahead. Students begin their study with an exploration of representations of data. Each of these representations will be revisited throughout the remainder of this course, with increasing levels of depth.

Much of the mathematics students will learn this year requires students to model a quantity and its relationship to other quantities. Rather than jumping straight to an algorithm, the focus at this stage is on developing more concrete models of the mathematical concepts. By doing so, students can deepen their understanding as they build their skill and fluency in mathematics.

Numbers and Data (Section 1.1)

A clothesline is used to introduce students to the mathematical representation of a number line. This gives students a memorable experience to ground their work in the number line model for the rest of the course and beyond. Repeated values on a clothesline are a precursor for histograms, which students also create in this section.



Shapes and Area (Section 1.2)

Students apply prior knowledge to determine the area of composite figures by rearranging them into more familiar rectangles. Formulas to calculate the area of triangles and non-rectangular quadrilaterals will be developed in future chapters.



Expressions (Section 1.3)

This section moves away from the concrete representations of number lines and rectangles to a more abstract representation of numeric expressions. This section lays the groundwork for the development of variable expressions and equations, which will be formally introduced in Chapters 8 and 9.

Try This at Home!

Students will see many data displays this year, and discuss what they do and do not reveal. Share a graph (such as a histogram or bar graph) from a news article or other source, and talk with your student about how the graph tells a story.

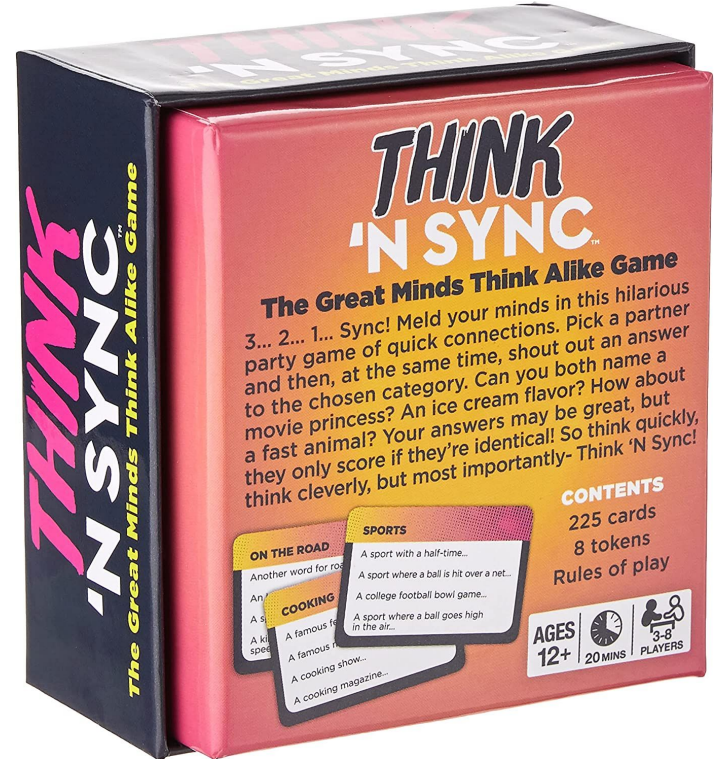
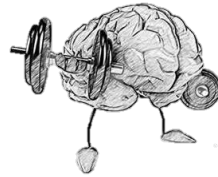
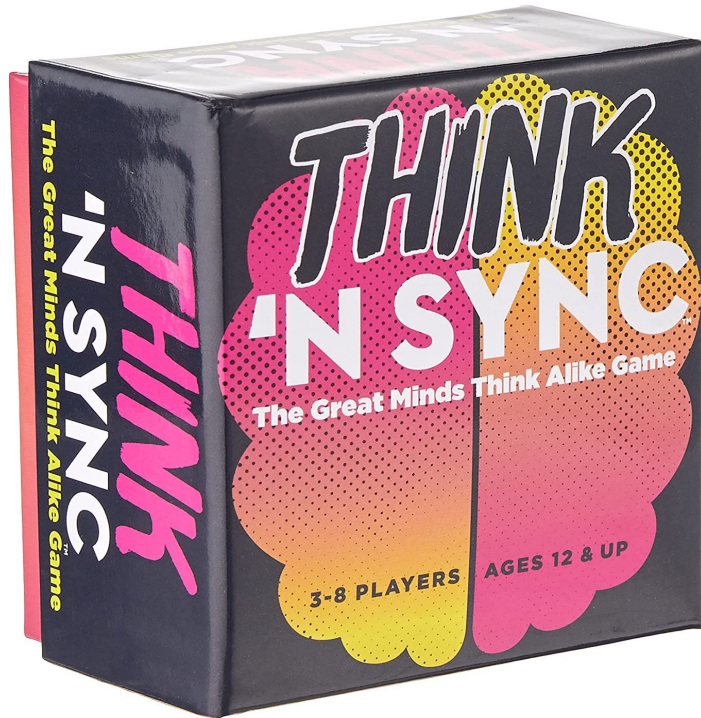


Current Topics
Chapter overview and section by section

Try This at Home!
Suggested discussions and activities

Brain Break

Think 'N Sync!



Agenda

Session 8



Focus: Mixed, Spaced Practice

- + Opening & Icebreaker
- + Assessment Beliefs
- + Mixed, Spaced Practice
- + Summative Assessment
- + **Closure**




Learning Target: I can reflect on the learning event and plan my next steps for the school year.


Closure






Inspiring Connections Action Plan



Professional Learning

-  Professional Learning Portal
-  Event Registration
-  Podcast

Danielle Boggs 

-  My Dashboard
-  Profile
-  Learning Log
-  File Cabinet
-  Action Plans

Pass It On

Collaborative Talk



Directions:

1. Obtain an envelope of sentence frames, questions, problems, etc.
2. The first team member selects and reads a prompt from the envelope, shares their response, and passes the paper to the next team member to respond.
3. The next team member responds, and passes the paper to the next teammate. Repeat until all teammates have had a chance to respond to the same prompt.
4. Repeat the process again with a new prompt, beginning with a new team member each time.



Implementation Action Plan

Pass It On



Team Task: 15 Minutes

- + Have someone read the prompts (Public Chat).
- + Provide think time.
- + Take turns responding.
- + Repeat the process.
 - + For each round, have a new person read the prompt and start the discussion.

Closure

Outcomes



Participants will:

become familiar with the CPM Mixed, Spaced Practice research pillar.

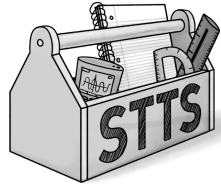
learn how the design of *Inspiring Connections* supports and develops mixed, spaced practice.

explore and experience *Inspiring Connections*.

reflect on current practices and assessment beliefs to develop a plan for the implementation of *Inspiring Connections*.

Closure

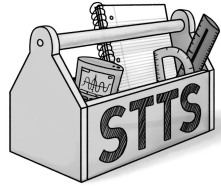
Study Team and Teaching Strategies & Math Language Routines



Ambassador	Go Chat	Pass It On	Stop and Scan	Stronger & Clearer
Board Report	Huddle	Pick Three	Swapmeet	Collect & Display
Carousel	Jigsaw	Quick Pitch	Talk-Write Discuss	Critique, Correct, Clarify
Dyad	Learning Ladder	Reciprocal Teaching	Teammates Consult	Information Gap
Exhibit Visit	Listening Post	Red Light, Green Light	Team Spotlight	Co-Craft Questions
Fishbowl	Numbered Heads	Relay	Think-Ink-Pair-Share	Three Reads
Give One, Get One	Pairs Check	Share Around	Visibly Random Teams	Compare & Connect
Glow and Grow	Partner	Silent Debate		Discussion Supports

Closure

Study Team and Teaching Strategies & Math Language Routines



Ambassador	Go Chat	Pass It On	Stop and Scan	Stronger & Clearer
Board Report	Huddle	Pick Three	Swapmeet	Collect & Display
Carousel	Jigsaw	Quick Pitch	Talk-Write Discuss	Critique, Correct, Clarify
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Give One, Get One	Pairs Check	Share Around	Visibly Random Teams	Compare & Connect
Glow and Grow	Partner	Silent Debate		Discussion Supports

Closure

Three Research Pillars



SECTION ONE: The pillars that represent necessary first steps in any implementation.

Collaborative Learning

Students and teachers are aware of the purpose for and value of working in teams, and are familiar with team norms and roles.

Problem-Based Learning

Students and teachers share math authority as they value and engage in productive struggle. Teachers guide without taking over the thinking.

Mixed, Spaced Practice

Both individual lessons and chapters are followed, using suggested pacing. Reflection and Practice problems are assigned and valued as an essential part of learning.

Closure

Teacher Tips



Teacher Actions That Support Implementation

Use the Authors' Vision as intended.

Work all the problems in the lesson ahead of time, including the Reflection & Practice problems.

Create purposeful lesson plans.

Closure

Professional Learning Support



My Live Events Waiting Lists Live Event Catalog

Only show contracted events Only show available events

Search EVENT FORMAT ALL DATES ALL REGIONS ALL STATES EVENT TYPE



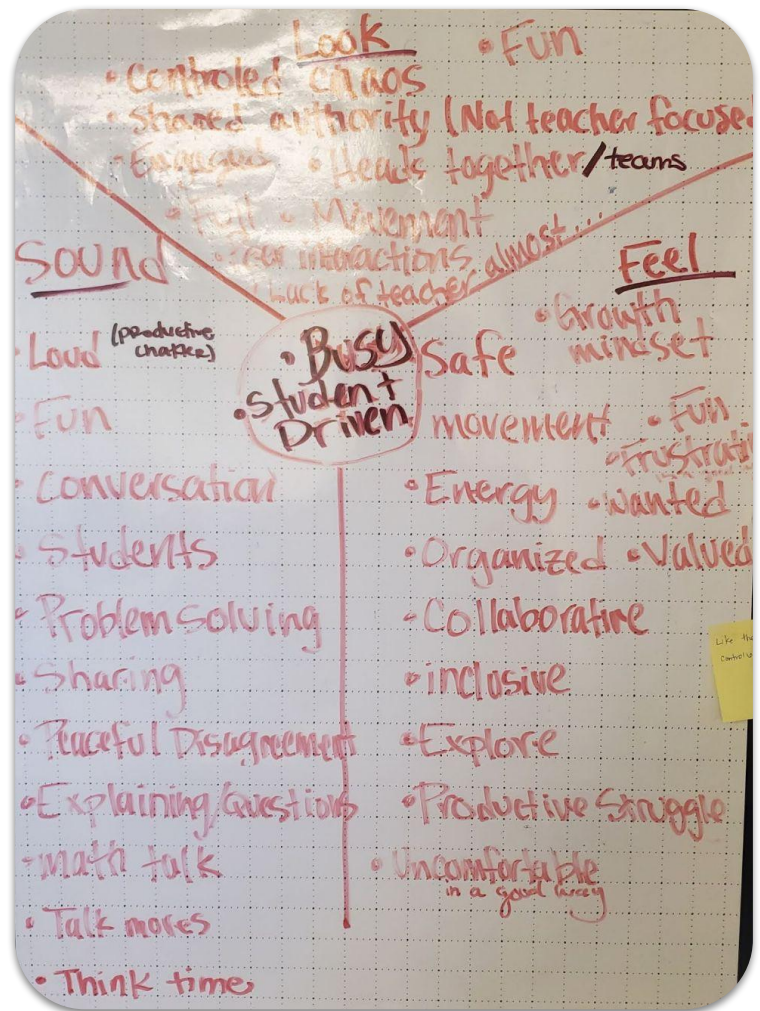
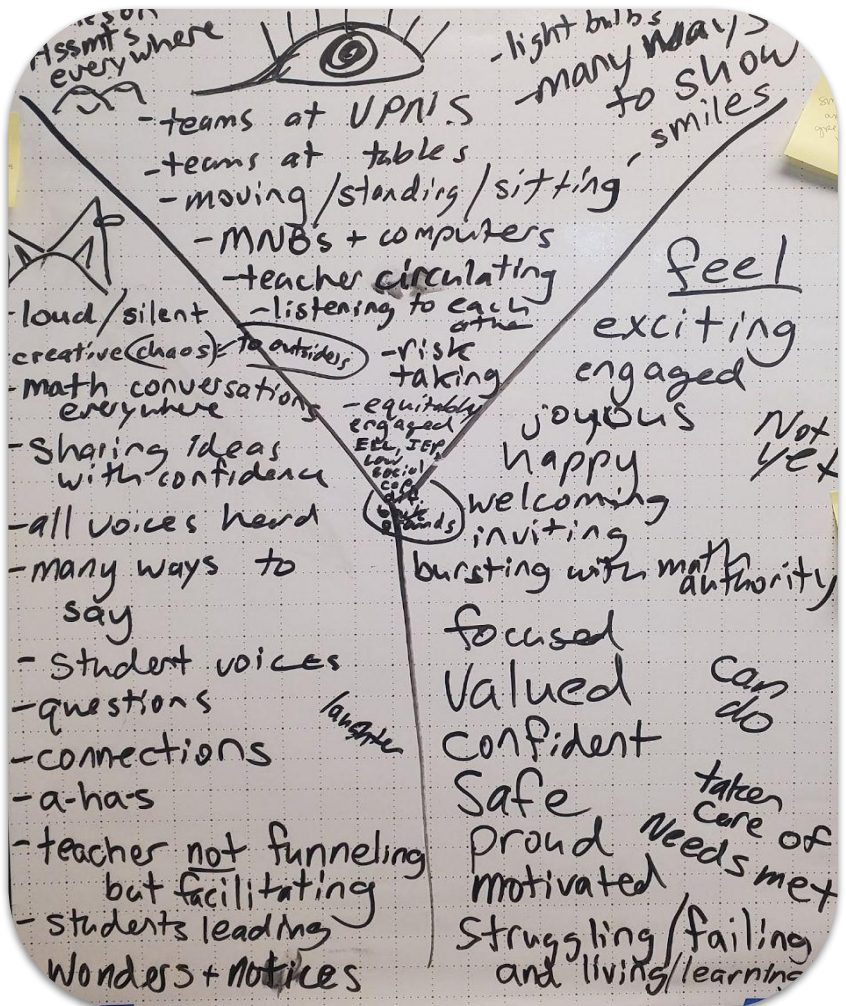
Before You Start Inspiring Connections
Foundations for Implementation Series



Course Content in Inspiring Connections
Foundations for Implementation Series



Once You've Started Inspiring Connections
Foundations for Implementation Series



Closure



- + **Parking Lot**

- + **Attendance & Feedback**

Enter passcode in the portal: #####

- + **Next Steps:**

- Practice Pacing
- Access and review the modules to support your preparation:
 - “Course Content in Inspiring Connections” (yellow)
 - “Before You Start Inspiring Connections” (green)
- Register for Follow-Up



@CPMeducationalprogram



@CPMmath



@CPMmath