



Foundations for Implementation – Session 6

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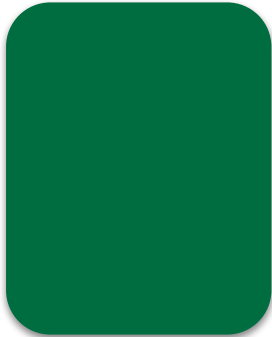
Rev 6/8/23 (ce)

Welcome!

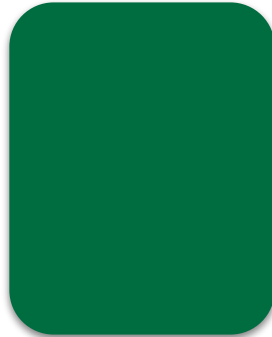
CPM Virtual Learning Series



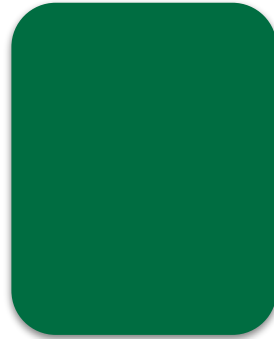
Session Facilitators



Name



Name



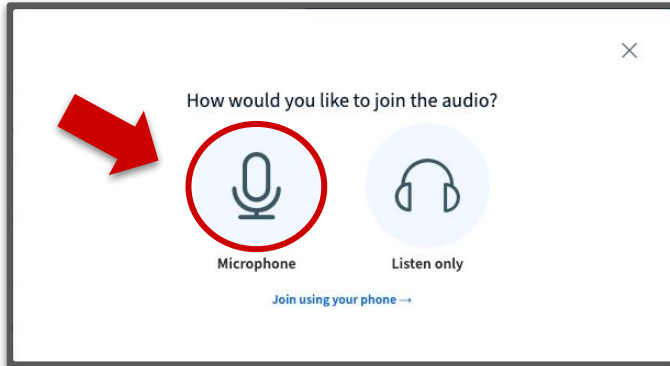
Name

**Regional
Professional
Learning
Coordinator**

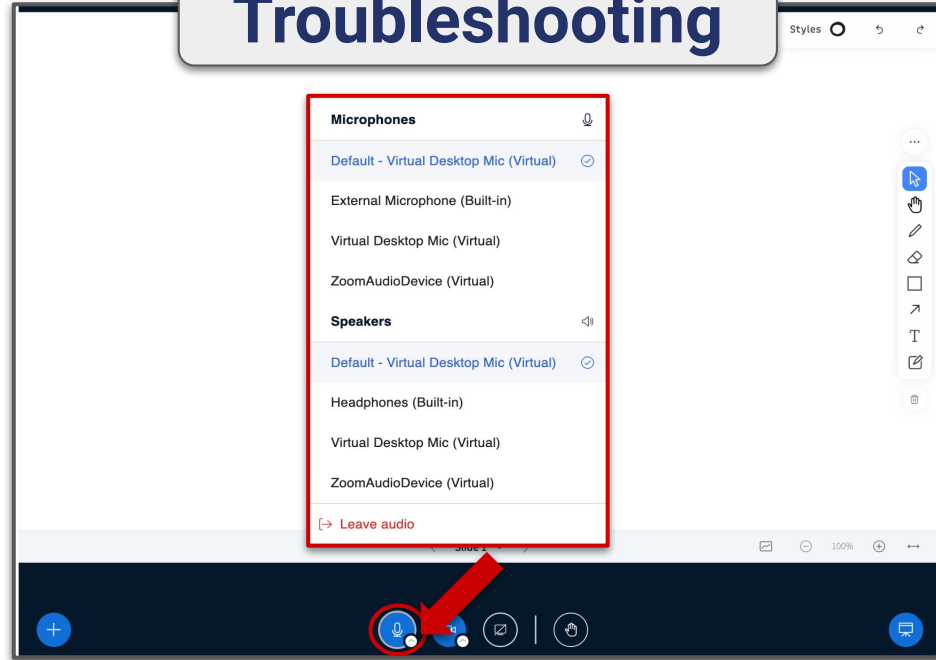
Tech Tip



Audio



Troubleshooting



Opening

Professional Learning Checklist



	Summer Session	Fall Semester	Spring Semester
Live Learning Events	<input type="checkbox"/> Register and attend: In-Person Days 1-3 or Virtual Sessions 1-6	<input type="checkbox"/> Register and attend: In-Person Follow Up Day 1 or Virtual Follow Up Sessions 1 and 2	<input type="checkbox"/> Register and attend: In-Person Follow Up Day 2 or Virtual Follow Up Sessions 3 and 4
Content Modules (On-Demand)	<input type="checkbox"/> Chapter 1 <input type="checkbox"/> Chapter 2	<input type="checkbox"/> Chapter 3 <input type="checkbox"/> Chapter _____	<input type="checkbox"/> Chapter _____ <input type="checkbox"/> Chapter _____
Instructional Modules* (On-Demand)	<input type="checkbox"/> 1 - Closure and Team Assessments <input type="checkbox"/> 2 - Review & Preview <input type="checkbox"/> 3 - Intentional Planning	<input type="checkbox"/> 4 - Supporting Productive Struggle	<input type="checkbox"/> 5 - Assessment Practices

* Instructional Modules 1–5 will be opened and available upon completion of the Introduction to Foundations Module.
If you support special education or intervention, Inclusion Modules may be completed in place of the Instructional Modules.

Opening

Outcomes



Participants will:

- + Learn how Mixed, Spaced Practice connects to assessment practices.
- + Finalize their Implementation Action Plan.
- + Collaborate and learn with other teachers.

Opening Agenda

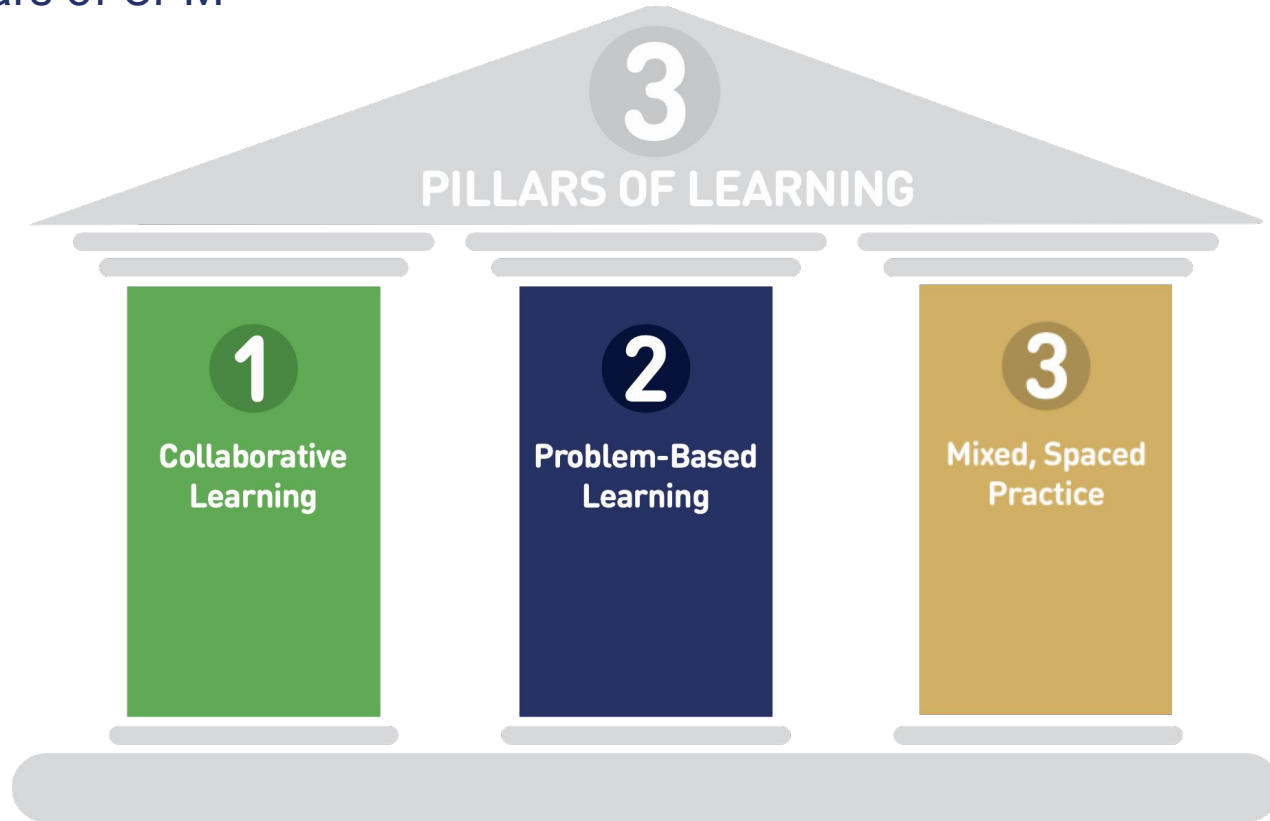


Focus: Mixed, Spaced Practice

- Icebreaker
- Assessment Beliefs
- MSP & Summative Assessment
- Implementation Action Plan
- Closure

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!

Click on the emoji icon at the bottom of the screen and set your status to thumbs up if you are ready to begin.



Agenda

Session Six



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- Icebreaker**
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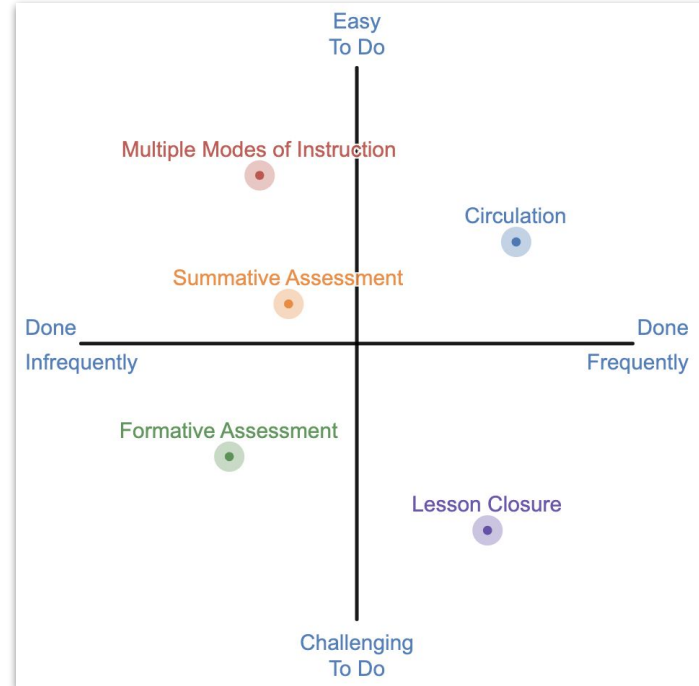
Icebreaker

Assessment Beliefs



Open the Google Slides link.

Complete screens 1 through 6.



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

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Focus: Mixed, Spaced Practice

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Mixed, Spaced Practice

Formative Assessment to Inform Summative Assessment



“Authentic assessment begins with teachers actively circulating the classroom while students work on mathematics in small teams. As they move strategically around the room, teachers are carefully listening to conversations and asking deliberate questions that require students to describe, analyze, make inferences, or generalize.”

—CPM’s Position Paper on Assessment

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

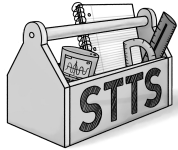
Mixed, Spaced Practice

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



Think-Ink-Share

Principles of Assessment ③

Students should be assessed only on content with which they have been meaningfully engaged, and with which they have had ample time to make sense of.

How might Principle 3 guide your summative assessment practices?

Mixed, Spaced Practice

Summative Assessment



How does the design of **Mixed, Spaced Practice** provide opportunities for teachers to **develop fair and balanced summative assessments** for students?



Mixed, Spaced Practice

Mixed, Spaced Practice



How is Mixed, Spaced Practice integrated into the curriculum?

- + Chapter Sections
- + Problems in the Lessons
- + **Review & Preview**
- + **Checkpoint Problems**
- + **Chapter Closure**
- + **Summative & Team Assessments**
- + Threads within Courses
- + Vertical Threads through Courses

Mixed, Spaced Practice

Resources to Guide Summative Assessments



Review & Preview Problems

Checkpoint Problems

Chapter Closure Problems

Summative and Team Assessments

Summative Assessment

Support for Summative Assessments



Supports & tools for building assessments

Suggested Assessment Plan

CPM EDUCATIONAL PROGRAM

eTools | Calculators | Translate | CPM

Introduction | Chapter 1 | Chapter 2 | 2. Opening | 2.1.1 | 2.1.2 | 2.1.3 | 2.1.4 | 2.2.1 | 2.2.2 | 2.2.3 | 2.3.1

CC Algebra 2

Lesson (ENG) | Lección (ESP) | Answers | **Teacher Notes** | My Notes

Suggested Assessment Plan for Chapter 2

In the *Core Connections* courses, students are expected to use a broad range of skills and abilities are used to showcase students' skills and abilities. These strategies should include individual tests and portfolios.

Information about assessment strategies and grading can be found in the [Assessment](#) section in the

Ideas for Individual Test

It is strongly recommended that **more than half** of each test in the course be made up of material opportunity to show mastery of concepts over time.

As you move through the course, you will need to be selective about the number of concepts that you believe your students should have mastered and that you

Sample Tests

Sample tests for this course are available under the Teacher tab located at the top right of the page.

[Click here for a list of sample tests.](#)

Core Connections Algebra - Chapter 2 - Individual Version 1

Name: _____ Date: _____

1. Below are the graphs of three relationships, A, B, and C.

A. B. C.

a. Which relationship has a domain of all real numbers? _____

b. Which relationship has a range of only positive numbers? _____

2. Is the relationship shown in graph A a function? Why or why not? Explain completely.

Solve: $CCSS.Math.Content.HSF-IP.A$

3. Is $x = -3$ in the domain of $f(x) = \frac{x^2 + 1}{x - 2}$? Why or why not? Explain completely.

Solve: $CCSS.Math.Content.HSF-IP.B$

4. Evaluate each expression for the given value.

a. $|9 - m| + 3m$, for $m = -2$

b. $\frac{m + 4}{(m - 1)(m + 1)}$, for $g = 2$

Solve:

5. Determine the slope of each situation.

a.

x	5	6	7	8	9
y	-2	1	4	7	10

b.

Assessment Bank

Home | Testbank | Precalculus | Calculus | Statistics | Java

CPM Test Generator

ADVISORY: You will save yourself time and reduce frustration if you carefully read [these instructions](#) completely during your first use of this site.

- To find problems, first click on the "u" symbol next to the course name, check the boxes next to the types of problems you are looking for, and click "Search".
- The settings on the right allow you to narrow your search.
- Please follow the Help link at the top right of the page for additional help notes.
- Choose the links in the gray bar above for Precalculus and Calculus Assessment and Solution Manuals.

NOTICE: The CPM Assessment Team is in the process of updating Assessment Items for the new CCSSM aligned courses. The site will be changing as new problems are submitted. Please check back often to see the progress being made. The Test Bank and sample tests for the Connections books continue to be available. Feel free to report errors via the Suggestions and Comments link at the bottom of the website page.

Download Sample Tests

Core Connections, Course 1
Core Connections, Course 2
Core Connections, Course 3
Core Connections Algebra
Core Connections Geometry
Core Connections Algebra 2
Core Connections Integrated I
Core Connections Integrated II
Core Connections Integrated III
Precalculus Third Edition
Precalculus Third Edition Exp
Making Connections 1

Keywords: _____

Question ID Range: _____

Problem type: Individual Team Math

Difficulty: Beginner Intermediate Advanced All

Search results per page: [25]

Search Clear Search

Select All Add Selected to Cart Checkout

Summative Assessment

Support for Summative Assessments



Suggested Assessment Plan

Individual Tests:

- ✓ current chapter ($\approx 40\%$)
- ✓ previous chapters ($\approx 60\%$)
- ✓ consider waiting on assessing



The screenshot shows the CPM Educational Program website interface. The top navigation bar includes 'eTools', 'Calculators', 'Translate', and 'CPM'. The main content area is titled 'CC Algebra' and includes a warning: 'PDF files should be printed before use.' Below this, there are tabs for 'Lesson (ENG)', 'Lección (ESP)', 'Answers', 'Teacher Notes', and 'My Notes'. The 'Teacher Notes' tab is active, displaying the 'Suggested Assessment Plan for Chapter 2'. The page lists various sections (2.1.1 to 2.3.1) with corresponding text. The text for 2.1.1 states: 'In the *Core Connections* courses, students are expected to use a broad range of skills and abilities. Therefore, it is important that several assessment strategies are used to showcase students' skills and abilities. These strategies should include individual tests, team assessments, student presentations, class observations, and portfolios. Information about assessment strategies and grading can be found in the [Assessment](#) section in the Teacher tab of this eBook.' The text for 2.1.4 states: 'Ideas for Individual Test'. The text for 2.2.1 states: 'It is strongly recommended that *more than half* of each test in the course be made up of material from previous chapters. This affords your students the opportunity to show mastery of concepts over time. As you move through the course, you will need to be selective about the number of concepts that you assess on any single test. The list below contains many concepts. Select the concepts that you believe your students should have mastered and that you feel are most appropriate to summatively assess at this time. Put others on a list to assess later. It is neither necessary nor desirable to test every concept.' The text for 2.2.3 states: 'Use the formative assessment techniques recommended in the Suggested Lesson Activity and the Assessment Guidebook to determine which concepts your students have potentially mastered and which ones they still need more time to practice. Refer to CPM's Principles of Assessment and see the chapter sample test for guidance on topics, length, and difficulty.'

Teacher Tips

Summative Assessments



Assessments should focus on the big ideas, not all the ideas.

Assessments should be flexible.

Assessments should balance skills with problem solving.

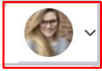
Assessments should honor that mastery takes time, effort, and support.

Implementation Action Plan

Mixed, Spaced Practice Reflection



1st



2nd

- Profile
- Learning Log
- File Cabinet
- Action Plans
- My CPM PL Record
- CPM eBooks
- Inspiring Connections
- Participant Handbook
- Preferences
- Log out

COLLABORATIVE LEARNING DAY ONE OR SESSIONS 1&2

TEAM ROLES

My plan for establishing and maintaining team roles in my classroom is _____.

No response yet

At least one actionable step I will commit to is _____.

No response yet

TEAM AGREEMENTS

My plan for establishing and maintaining team agreements is _____.

No response yet

At least one actionable

No response yet

MIXED, SPACED PRACTICE DAY THREE OR SESSIONS 5&6

PROBLEM-BASED LEARNING DAY TWO OR SESSIONS 3&4

LESSON LAUNCH AND CLOSURE

My plan to ensure students experience an effective lesson launch and closure is _____.

At least one actionable step I will commit to is _____.

No response yet

LESSON EXPLORE

My plan to effectively support problem-based lessons through circulation and questioning is _____.

No response yet

MANAGING STUDENT WORK

My plan to manage student work that justifies procedural understanding from conceptual understanding is _____.

No response yet

At least one actionable step I will commit to is _____.

No response yet

ASSESSMENT PRACTICES

My plan to create fair and balanced summative assessments using CPM tools and resources is _____.

No response yet

At least one actionable step I will commit to is _____.

No response yet

ep I will commit to is _____.



Brain Break

Name Game



1. Come up with an adjective that starts with the same letter as your first name.

(Examples: Magical Misty, Jolly Joel, Techy Tina)

2. Post this in the Public Chat.
3. After spending time with your colleagues in these past sessions, play the name game with one of your colleagues and share in the Public Chat.

How to participate?

Post your responses in the Public Chat.



Agenda

Session Six



Focus: Mixed, Spaced Practice

- Icebreaker
- Assessment Beliefs
- MSP & Summative Assessment
- Implementation Action Plan**
- Closure

Closure

Study Team and Teaching Strategy



Give One, Get One

- + Record three ideas to share related to a certain topic.
- + Circulate and share ideas; receive an idea for each one given and record the new ideas on a piece of paper, including the name of its author.
- + Begin group sharing by inviting a volunteer to express one of the ideas citing the author. The named person then continues the sharing process.

Agenda

Session Six



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Closure

Outcomes

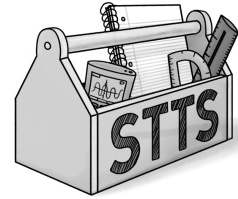


Participants will:

- + Learn how Mixed, Spaced Practice connects to assessment practices.
- + Finalize your Implementation Action Plan.
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Closure

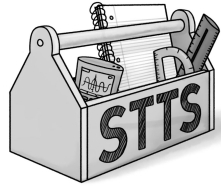
Study Team and Teaching Strategies



Ambassador	Fishbowl	Huddle	Notice & Wonder	Reciprocal Teach	Think-Ink-Pair-Share (T.I.P.S)
Carousel: Around the world	Fortune Cookie	I Spy	Pairs Check (Pairs Chat)	Red Light, Green Light	Think-Pair-Share
Carousel: Index Card	Gallery Walk	Jigsaw: 4 Corners	Participation Quiz	Silent Appointment	Traveling Salesman
Carousel: Station Rotation	Give One -Get One	Listening Post	Peer Edit	Silent Debate	Tuning Protocol
Dyad	Hot Potato	Numbered Heads	Pick Three	Swapmeet	Walk and Talk
Elevator Talk	Hot Seat	Math Chat	Proximity Partner	Teammates Consult	Whiparound

Closure

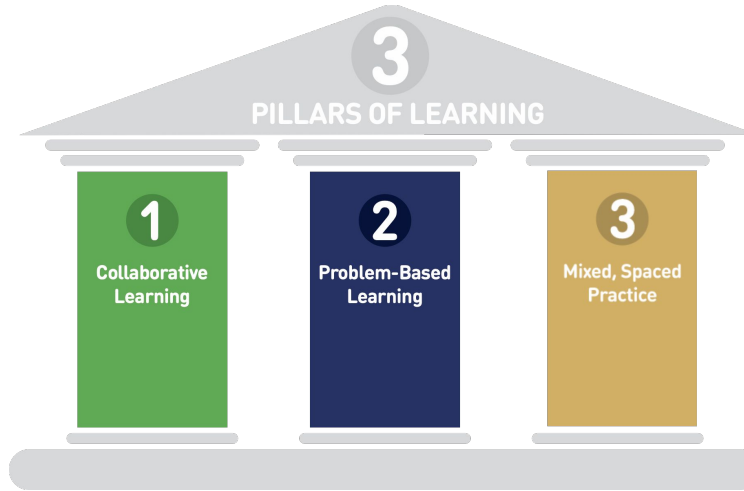
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Dyad	Hot Potato	Numbered Heads	Pick Three	Swapmeet	Walk and Talk
Elevator Talk	Hot Seat	Math Chat	Proximity Partner	Teammates Consult	Whiparound

Closure

Three Research Pillars



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. Review & Preview problems are assigned and valued as an essential part of learning.



Closure

Teacher Tips



Teacher Actions That Support Implementation

Use the Teacher Notes as intended.

Work all the problems in the lesson ahead of time, including the Review & Preview problems.

Create purposeful lesson plans.

Opening

Professional Learning Checklist



	Summer Session	Fall Semester	Spring Semester
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* Instructional Modules 1_5 will be opened and available upon completion of the Introduction to Foundations Module.

If you support special education or intervention, Inclusion Modules may be completed in place of the Instructional Modules.

Closure Support



ABOUT CPM

CPM's mission is to empower mathematics students and teachers through exemplary curriculum, professional development, and leadership.



CONNECT WITH US

- Facebook
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- Newsletter Blog
- Teacher Research Corps Blog
- Slack for CPM Teachers
- More Math for More People Podcast

LINKS

- Event Registration
- Why Choose CPM?
- Professional Learning
- Participant Handbook
- Continuing Education Credit
- Terms of Use
- Privacy Policy

NEED HELP?

- (209) 745-2055
- support@cpm.org
- Knowledge Base
- Regional Contacts

Closure Support



CPM PROFESSIONAL LEARNING PORTAL

My Dashboard / Live Events Schedule and Registration

CPM LIVE EVENTS SCHEDULE AND REGISTRATION

My Live Events Waiting Lists Live Event Catalog

Only show contracted events Only show available events

Search Virtual Learning Events All Regions All States Event Type

Start date Card

[Link to these results](#)

<p>SITE-BASED LEADERSHIP PROGRAM, 2024-25 <input type="checkbox"/> Virtual Learning Events</p> <p>The Site-Based Leadership Program provides districts the opportunity to work collaboratively with CPM to develop and ...</p>	<p>READING STRATEGIES FOR THE MATH CLASSROOM - ... <input type="checkbox"/> Virtual Learning Events</p> <p>June 18, 2024 from 8 am to 9:30 am Pacific Time.</p> <p>Reading is essential for making sense of problems. In this session, ...</p>	<p>ALGEBRA TILES - HS SOLVING EQUATIONS - JUNE ... <input type="checkbox"/> Virtual Learning Events</p> <p>June 18, 2024 from 10 am to 12 pm Pacific Time.</p> <p>Middle School Focus: Solving Equations Algebra tiles are used ...</p>	<p>ALGEBRA TILES - HS AREA MODEL - JUNE OPTION 2 <input type="checkbox"/> Virtual Learning Events</p> <p>June 18, 2024 from 10 am to 12 pm Pacific Time.</p> <p>High School Focus: Area Model Algebra tiles are used throughout CPM ...</p>



Wipebook



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- + Enter to win a reusable flipchart! A winner will be drawn after every 20 entries!



Go to wipebook.com/cpm

<input type="text" value="Work Email"/>	
<input type="text" value="First Name"/>	<input type="text" value="Last Name"/>
<input type="text" value="Select Job"/>	<input type="button" value="ENTER"/>

Closure



- + **Parking Lot**

- + **Attendance & Feedback**

Either scan the QR code

OR

Enter passcode in the portal

XXXXXX

- + **Next Steps:**

- Before the start of the school year:
 - Finish Instructional Modules 1 through 3.
 - Complete Content Modules 1 & 2.



@CPMeducationalprogram



@CPMmath