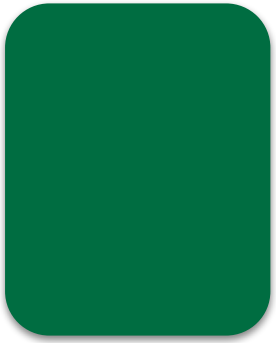
Foundations for Implementation – Session 5

Rev 6/8/23 (ce)

Welcome!

CPM Virtual Learning Series

Session Facilitators



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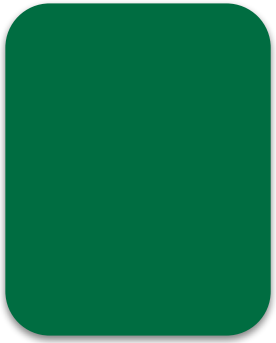

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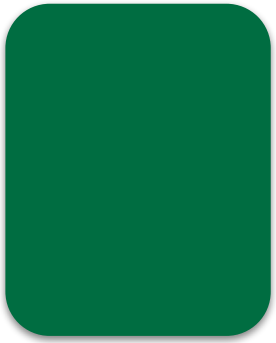


Name

Regional Professional Learning Coordinator

Opening

Professional Learning Checklist

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

+ Become familiar with the research behind the design of CPM courses.

+ Learn how Mixed, Spaced Practice connects to assessment practices.

+ Collaborate and learn with other teachers.

Opening

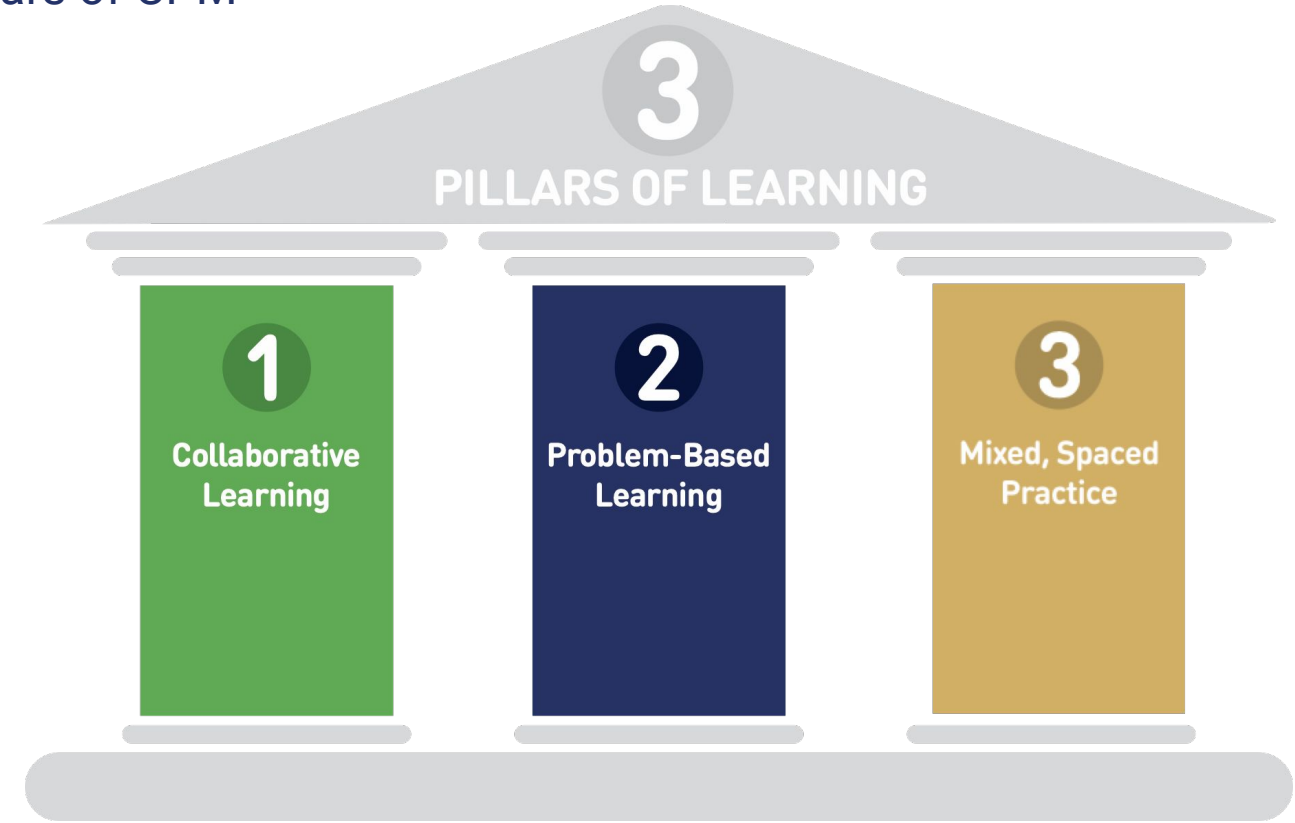
Agenda

Focus: Mixed, Spaced Practice

- ☐ Icebreaker
- ☐ Mixed, Spaced Practice
- ☐ Math Thread
- ☐ Formative Assessment
- ☐ 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 Five

Focus: Mixed, Spaced Practice

- ☐ **Icebreaker**
- ☐ Mixed, Spaced Practice
- ☐ Math Thread
- ☐ Formative Assessment
- ☐ Closure

Icebreaker

Study Team and Teaching Strategy

Pick Three

- Teacher posts a list of strengths.
- Each student selects and writes down three strengths they can contribute to their team.
- Students take turns sharing their strengths with their team.
- Students use strengths as they work on the lesson.

Icebreaker

Pick Three

Decide which three strengths you can contribute to your team & write them down.

- Pattern recognition
- Drawing
- Helping others
- Explaining my thinking
- Noticing details
- Keeping people on task
- Organizing
- Predicting
- Following directions
- Writing equations from patterns
- Looking at things in different ways
- Reading aloud
- Justifying answers
- Using technology

Icebreaker

Debrief

Student

Is it easier for you to see the growth and starting value in the table or the equation? Why?

Post your answer in the Public Chat.

The growth of a tile Pattern C is represented by the equation $y = 3x + 1$.

a. Copy and fill in the table for Pattern C.

Figure # x	0	1	2	3	4
# of Tiles y	1	4	7	10	13

+3 +3 +3 +3

b. By how many tiles is Pattern C growing? What is the starting value?

+3

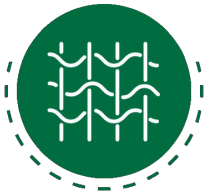
c. Where do you look in the table to see the growth and starting value?

d. Where do you look in the equation to see the growth and starting value?

Managing Student Work

Things to consider:

Learning Logs



Toolkits & Math Notes

Math Work

- Core problems
- Resource Pages
- Review & Preview

Managing Student Work

Teacher Tips

Use Toolkits for Math Notes and Learning logs for CC1, CC2 and CC3 courses.

Create an Interactive Notebook.

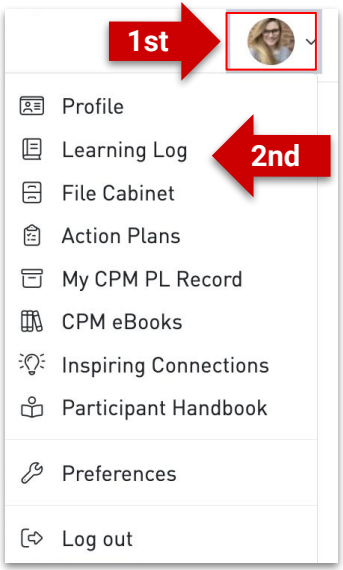
Have students use a 3 ring binder or folder to organize classwork, resource pages, and homework.

Use a Learning Management System.

Learning Log

Steps to access

1.



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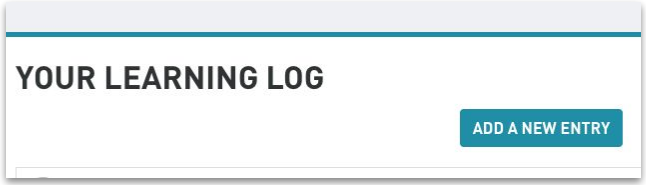

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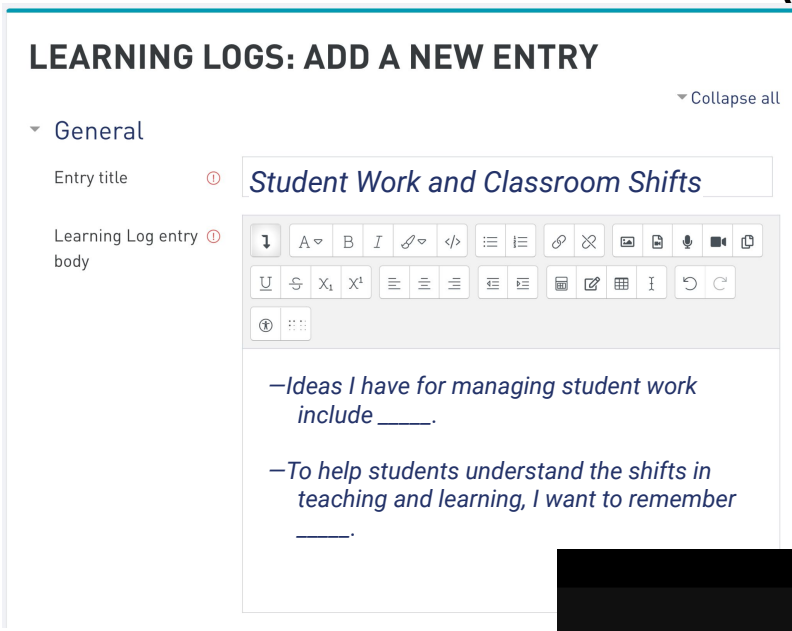
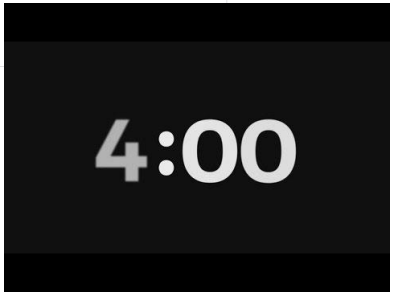




Agenda

Session Five

Focus: Mixed, Spaced Practice

- [x] Icebreaker
- [ ] **Mixed, Spaced Practice**
- [ ] Math Thread
- [ ] Formative Assessment
- [ ] Closure

Mixed, Spaced Practice

Mixed, Spaced Practice – Why?

Teacher

CPM's 2023 Research Base

Executive Summary

Mixed, Spaced Practice

eBook:

Click on the **Teacher Tab** on the left side
Next choose **Program Description**
Select the tab **Research3: MSP**

OR

use the link in the Public Chat

Mixed, Spaced Practice

Reading Protocol

Connect-Extend-Challenge

Read the article.

Reflect using the following questions:

- How are the ideas and information presented **connected** with what you already knew?
- What new ideas did you get that **extended** or broadened your thinking?
- What **challenges** or puzzles have come up in your mind from the ideas and information presented?

Feel like a lot to read?
Focus on the **blue boxes:**
"CPM infers from this research that…"

Mixed, Spaced Practice

Mixed, Space Practice – How?

How is Mixed, Spaced Practice integrated into the curriculum?

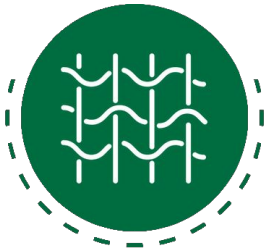
- Chapter sections
- Problems in the lessons
- Review & Preview
- Checkpoint Problems
- Chapter Closure
- Summative & Team assessments
- **Threads within courses**
- **Vertical threads through courses**

Mixed, Spaced Practice

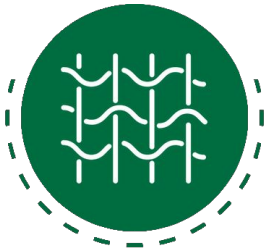
Design of the Curriculum

Core Connections

The design of the curriculum emphasizes the connected nature of mathematics.



Thread within Courses – Each course weaves topic-strands together to make connections emerge naturally, and to facilitate deeper understanding.



Vertical Threads through Courses – The design of the CPM courses builds conceptual foundations slowly, with an emphasis on using manipulatives and technology tools, and looking at problems in multiple ways.

Agenda

Session Five

Focus: Mixed, Spaced Practice

- [x] Icebreaker
- [x] Mixed, Spaced Practice
- [ ] **Math Thread**
- [ ] Formative Assessment
- [ ] Closure

Math Thread

Team Agreements and Roles

- **Resource Manager**
- **Facilitator**
- **Task Manager**
- **Recorder/Reporter**

Together, work to learn mathematics

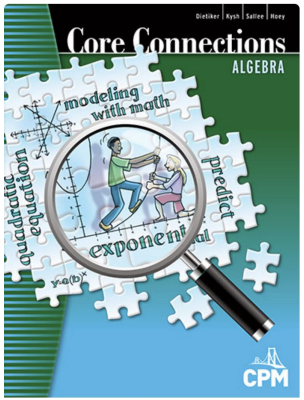
Explain and give reasons

Ask questions and share ideas

Members of your team are your first resource

Strive for understanding

Math Thread



Lesson 2.1.2
How can I measure steepness?

Core Connections Algebra

Thread: Multiple Representation

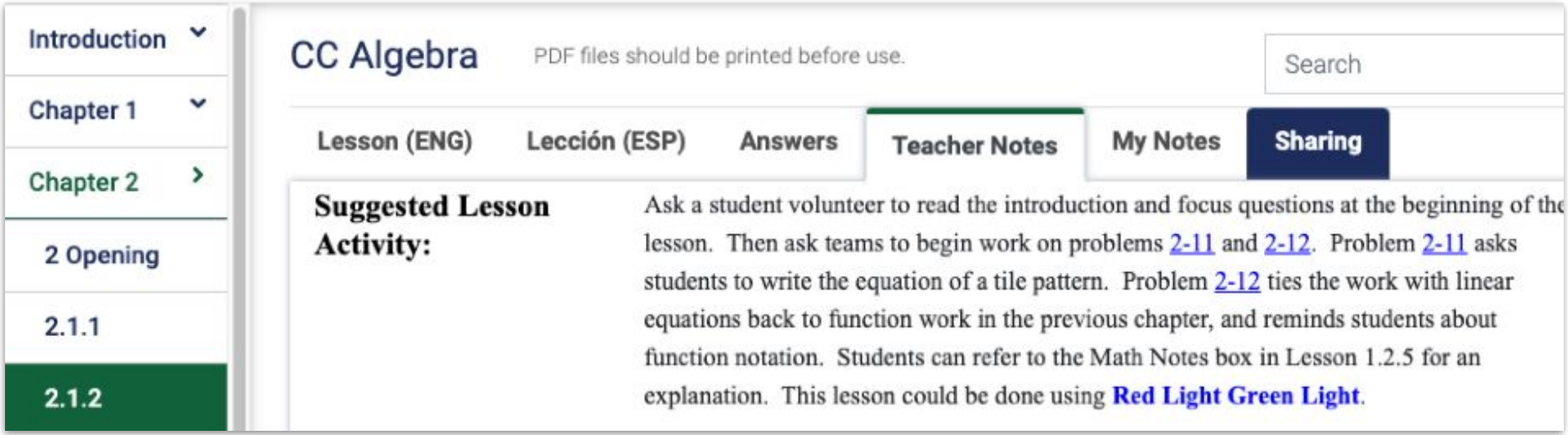
Math goal:
Connect growth and starting value to multiple representations of a linear function.

Team goal:
Share your reasoning with your team.

Math Thread

Closure

Teacher Notes – CCA Lesson 2.1.1



Brain Break

Take your Shot

1. Stand up.
2. Stand tall.
3. Warm up by swinging your arms back and forth.
4. Practice your stance a few times.
5. Now imagine you are up. It's time to to take your shot. 3 … 2 … 1!

How to participate?

Stand up and follow along with the facilitators.

Agenda

Session Five

Focus: Mixed, Spaced Practice

- [x] Icebreaker
- [x] Mixed, Spaced Practice
- [x] Math Thread
- [ ] **Formative Assessment**
- [ ] Closure

Formative Assessment

And Mixed, Space Practice

How does the design of Mixed, Spaced Practice provide opportunities for teachers to formatively assess students?

Principles of Assessment

And Formative 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.

Formative Assessment

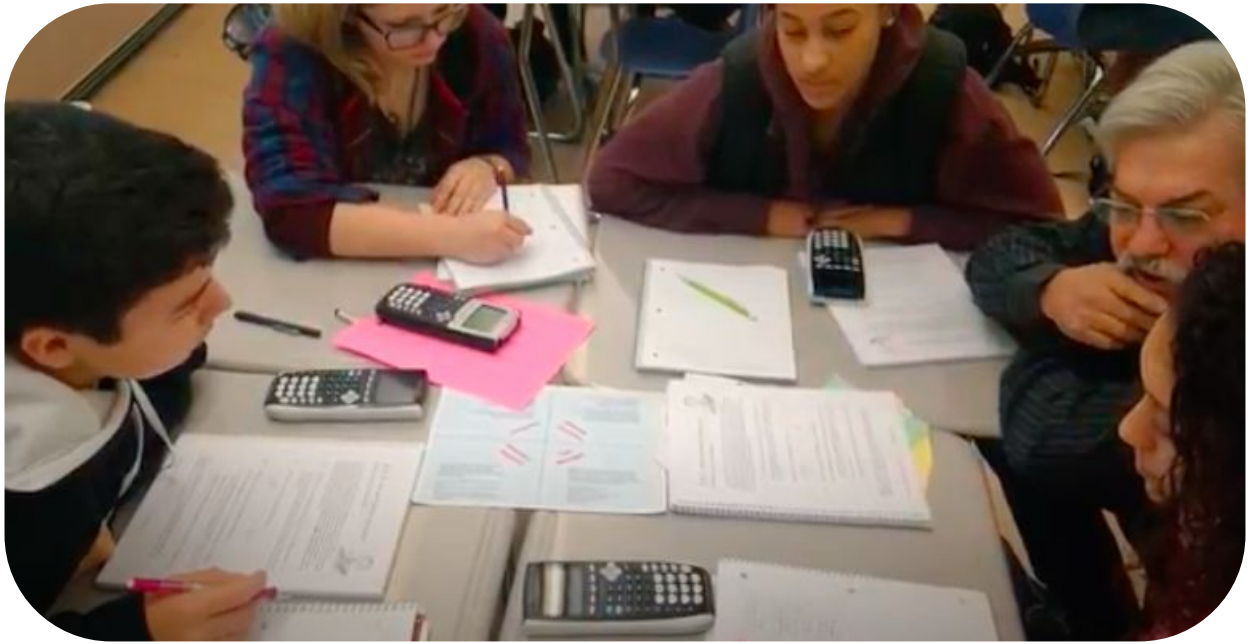
And Collaborative Learning

Formative Assessment

And Problem-Based Learning

Formative Assessment

And Mixed, Space Practice



Formative Assessment

And Mixed, Space Practice

How does the design of Mixed, Spaced Practice provide opportunities for teachers to formatively assess students?

Formative Assessment

Study Team and Teaching Strategies

Jigsaw

- Each team member is assigned a different part of a topic or concept.
- Team member learns about their topic or concept.
- Team members present the information they learned to the team.

Formative Assessment

Jigsaw

1. **Navigate** to the the Assessment tab.

   eBook ▹ Teacher Tab ▹ Assessment tab

2. **Read** your assigned section.

RM	Presentations
F	Observations
T	Team Assessments
R/R	Individual Assessments

Agenda

Session Five

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- [ ] **Closure**

Closure

Outcomes

Participants will:

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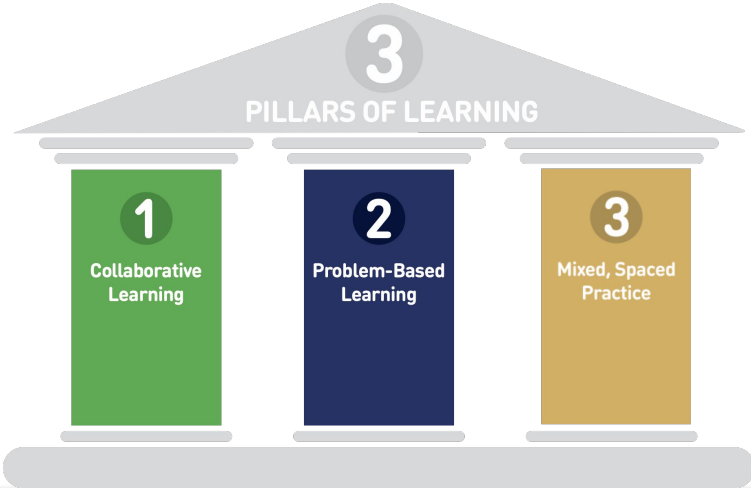
Closure

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

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. 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.

Closure

Ignite Your Classroom

Start promptly.

Peer support expected within each team.

Active learning.

Respond to the team rather than individuals.

Circulate. **C**irculate. **C**irculate.

Closure. **C**losure.

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.

PUT QR Code HERE

@CPMeducationalprogram @CPMmath @CPMmath

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

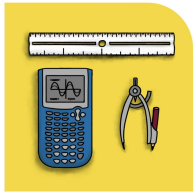
STUDY TEAMS

LEARNING TARGET

TASK CARD

TEAM ROLES ALL

RESOURCE MANAGER



TASK MANAGER

REPORTER RECORDER

FACILITATOR

IMPLEMENTATION ACTION PLAN

TEAM ROOMS

IMPLEMENTATION PROGRESS TOOL

STTS