Foundations for *Inspiring Connections* - Session 7

Welcome!

Foundations for Inspiring Connections - Session 7

What should I do before we get started?

- Please unmute to respond to the door question - If you can have an all-access pass to a musical performer/group, who would you choose?
- Review our Virtual Routines.

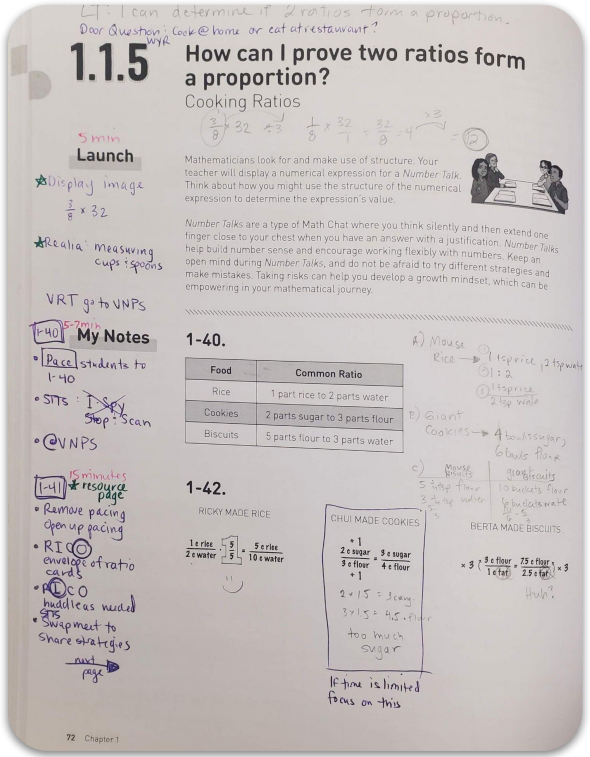
Virtual Routines

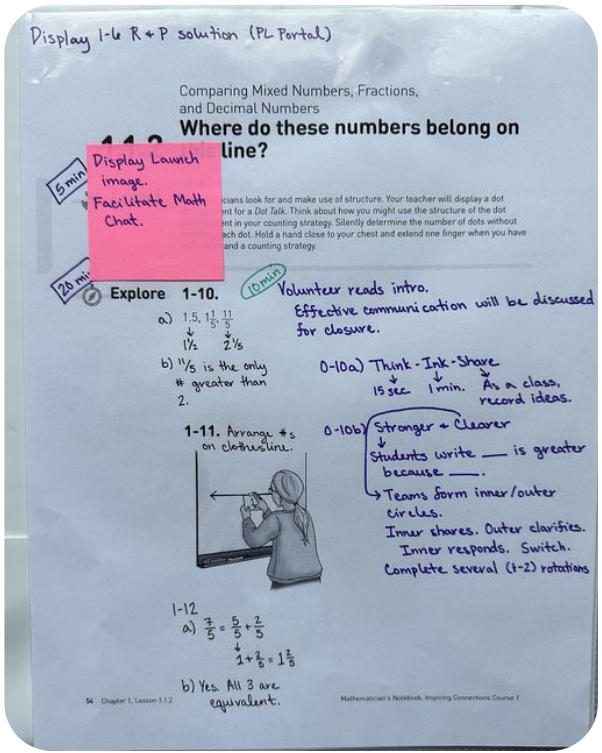
- Join with microphone.
- Private Chat Facilitator for individual support.
- Share your ideas.

2

Welcome!

CPM Virtual Learning Series





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*.

Agenda

Session 7

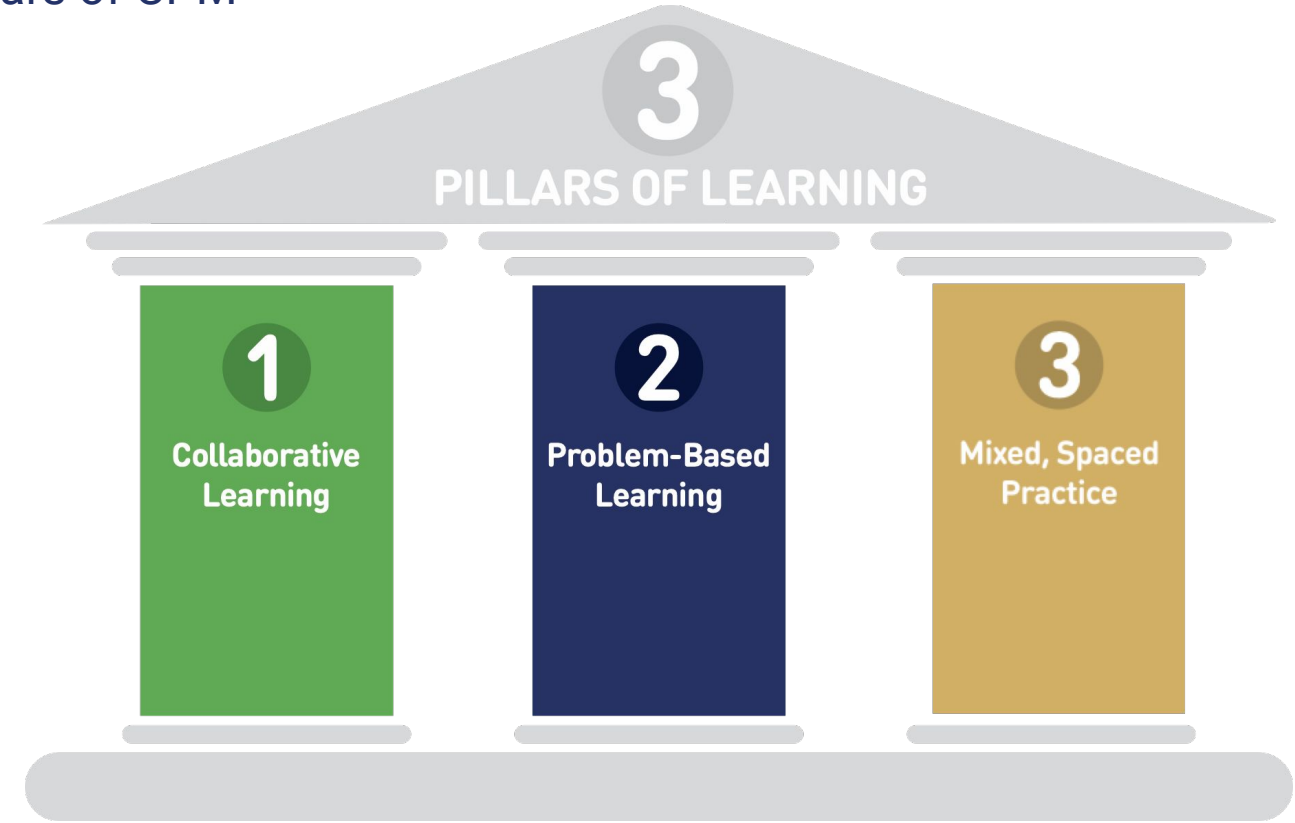
Focus: Mixed, Spaced Practice

- **Opening & Icebreaker**
- Mixed, Spaced Practice
- Team Challenge
- Chapter Closure
- 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.

Agenda

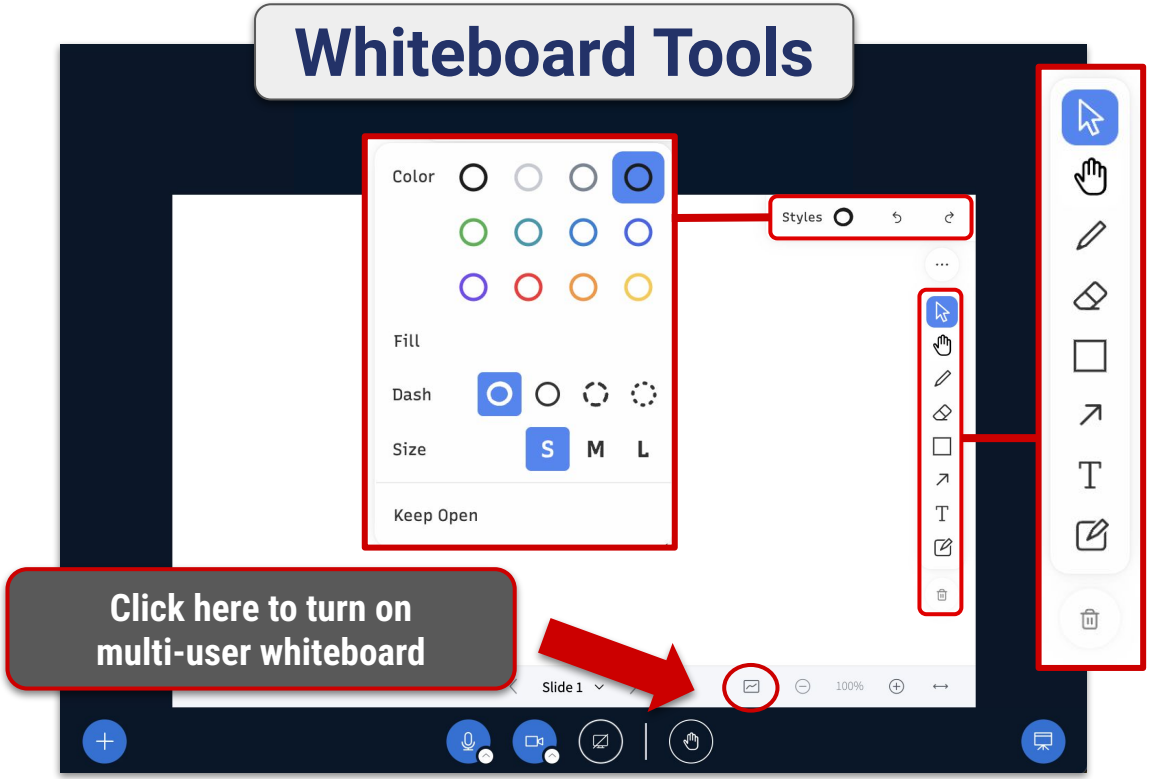
Session 7

Focus: Mixed, Spaced Practice

- **Opening & Icebreaker**
- Mixed, Spaced Practice
- Team Challenge
- Chapter Closure
- Assessment
- Closure

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

Tech Tip

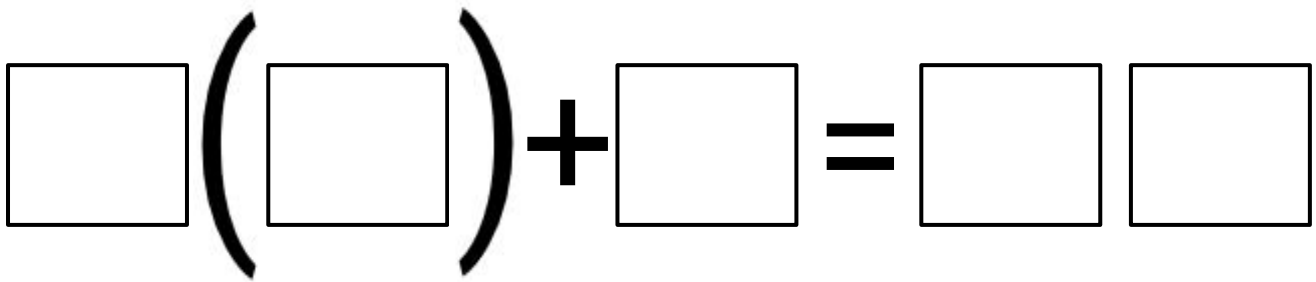


Team Room Routines

- Join with microphone.
- Webcams (encouraged)
- Offer support to team.
- Share your ideas.

Opening

Icebreaker - IC2 Lesson 1.2.7 Closure - Dakabibi



Opening

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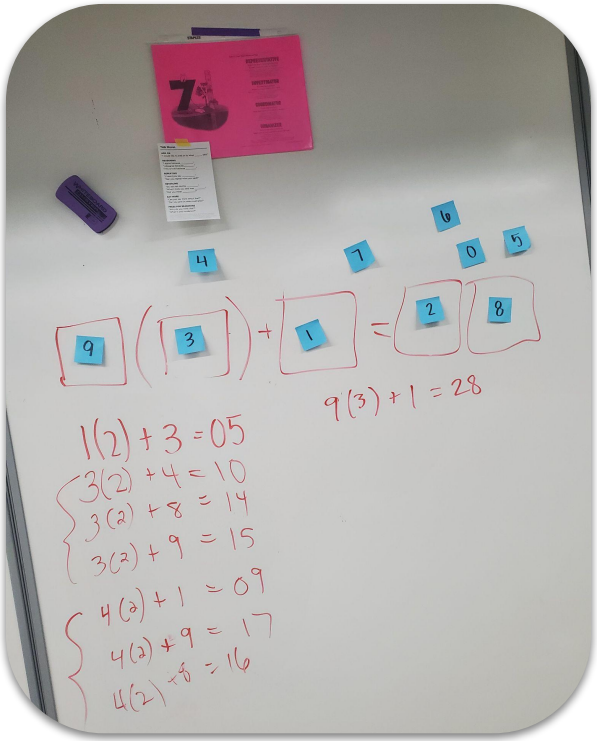
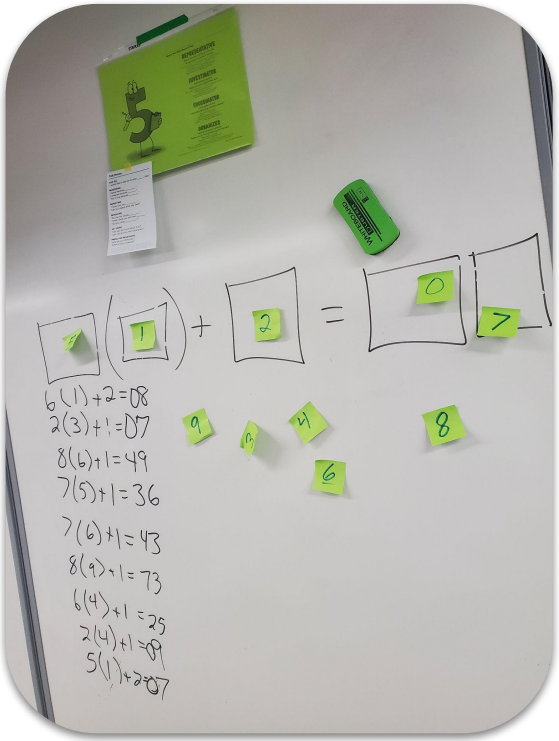




Agenda

Session 7

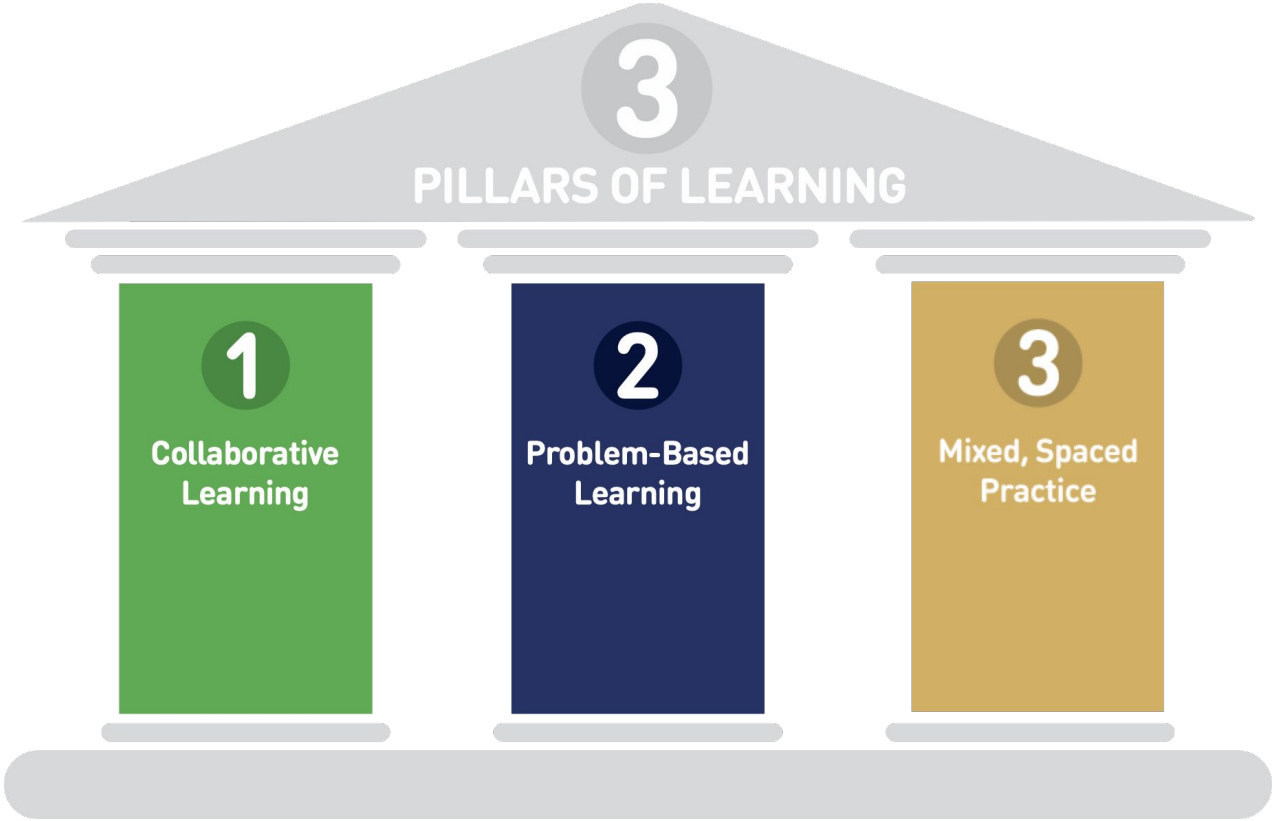
Focus: Mixed, Spaced Practice

- Opening & Icebreaker
- **Mixed, Spaced Practice**
- Team Challenge
- Chapter Closure
- Assessment
- Closure

Learning Target: I can explain the role of Mixed, Spaced Practice in the curriculum.

Mixed, Spaced Practice

Pillars



Mixed, Spaced Practice

Reading Protocol

Teacher

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?

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Mixed, Spaced Practice

Reading Protocol

Teacher

Connect-Extend-Challenge

Share your answer to <u>one</u> of 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?

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Mixed, Spaced Practice

Embedded Supports

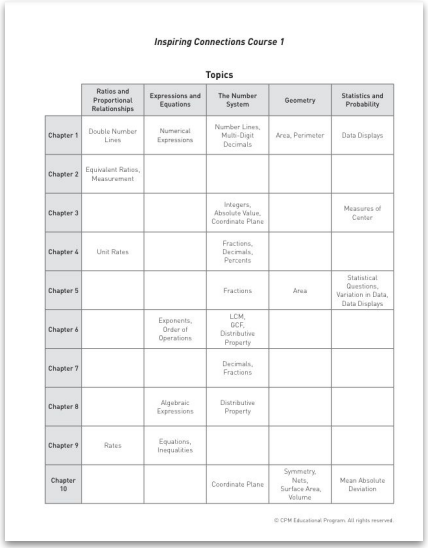
How does *Inspiring Connections* support Mixed, Spaced Practice?

- **Lesson Launches & Chapter Closures**
- **Threads (Course & Vertical)**
- **Reflection & Practice Assignments (Methods & Meanings)**
- **Assessments**
- **Reflection & Goal Journals**
- **Learning Targets ("I can" statements)**

Mixed, Spaced Practice

Vertical Threads

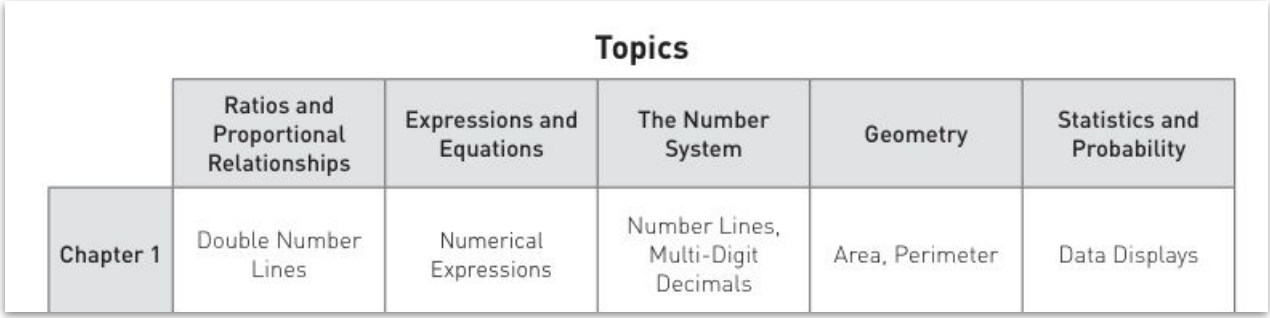
Learning Target:
I can explain MSP and where it is supported in *IC*.



Inspiring Connections Course 1

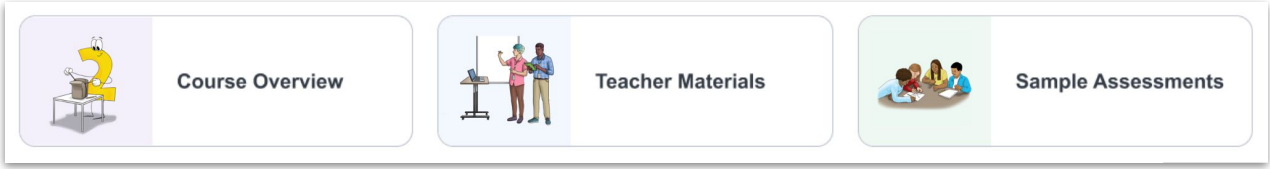
Topics

	Ratios and Proportional Relationships	Expressions and Equations	The Number System	Geometry	Statistics and Probability
Chapter 1	Double Number Lines	Numerical Expressions	Number Lines, Multi-Digit Decimals	Area, Perimeter	Data Displays
Chapter 2	Equivalent Ratios, Measurement				
Chapter 3			Integers, Absolute Value, Coordinate Plane		Measures of Center
Chapter 4	Unit Rates		Fractions, Decimals, Percents		
Chapter 5			Fractions	Area	Statistical Questions, Variation in Data, Data Displays
Chapter 6		Exponents, Order of Operations	LCM, GCF, Distributive Property		
Chapter 7			Decimals, Fractions		
Chapter 8		Algebraic Expressions	Distributive Property		
Chapter 9	Rates	Equations, Inequalities			
Chapter 10			Coordinate Plane	Symmetry, Nets, Surface Area, Volume	Mean Absolute Deviation



Topics

	Ratios and Proportional Relationships	Expressions and Equations	The Number System	Geometry	Statistics and Probability
Chapter 1	Double Number Lines	Numerical Expressions	Number Lines, Multi-Digit Decimals	Area, Perimeter	Data Displays



Ongoing review and distributed practice within effective instruction are productive test preparation strategies.

- NCTM's Productive Assessment Beliefs

Brain Break

Snap Wink

1. Stand up.
2. Wink your left eye and snap your right hand index finger and thumb at the same time.
3. Wink your right eye and snap your left hand index finger and thumb at the same time.
4. Switch back and forth as fast as you can.

How to participate?

Stand up and follow along with the Facilitators.

Agenda

Session 7

Focus: Mixed, Spaced Practice

- Opening & Icebreaker
- Mixed, Spaced Practice
- **Team Challenge**
- Chapter Closure
- Assessment
- Closure

Learning Target: I can describe the purpose of a team challenge.

IC1 Chapter 2 Team Challenge

Student

42 marbles

2 yellow to 1 red

3 green to 5 blue

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IC1 Chapter 2 Team Challenge

Standards for Mathematical Practice

3. Choose at least one of the Standards for Mathematical Practice and describe a situation from this challenge where your team used that practice. State explicitly how your team used this practice to help work toward a solution.

Standards for Mathematical Practice

MP 1: Make sense of problems and persevere in solving them.

MP 2: Reason abstractly and quantitatively.

MP 3: Construct viable arguments and critique the reasoning of others.

MP 4: Model with mathematics.

MP 5: Use appropriate tools strategically.

MP 6: Attend to precision.

MP 7: Look for and make use of structure.

MP 8: Look for and express regularity in repeated reasoning.

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Team Challenge

Teacher

Authors' Vision

Inspiring Connections incorporates Team Challenges.

- two to four rich problems
- fun and engaging
- assess mathematical knowledge, problem-solving, perseverance, willingness to take risks, & collaboration

Team Challenge

Things to Discuss…

Learning Target:
I can describe the purpose of a team challenge.

How did you feel about your Team Challenge experience?

How will you honor that team challenges are intended for formative assessment and providing feedback on the Standards for Mathematical Practice (SMP)?

How do you envision facilitating Team Challenges?

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.

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Agenda

Session 7

Focus: Mixed, Spaced Practice

- Opening & Icebreaker
- Mixed, Spaced Practice
- Team Challenge
- **Chapter Closure**
- Assessment
- Closure

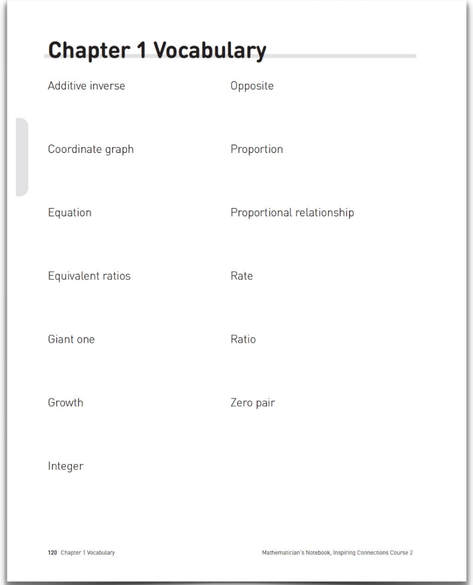
Learning Target: I can describe the four types of chapter closure.

Chapter Closure

Mathematician's Notebook

Teacher

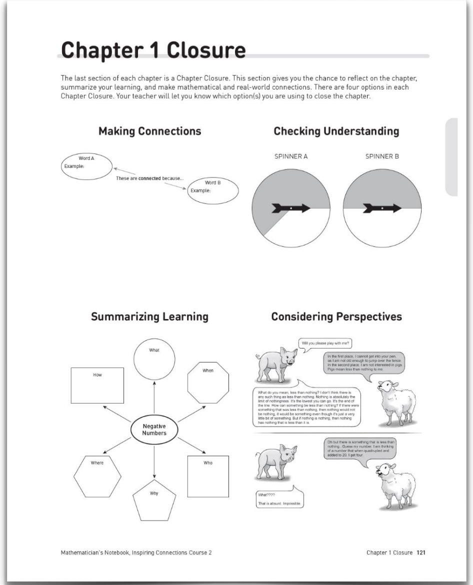
Your Task: Explore the Chapter Closure section of the Mathematician's Notebook.



Chapter 1 Vocabulary

Additive inverse	Opposite
Coordinate graph	Proportion
Equation	Proportional relationship
Equivalent ratios	Rate
Giant one	Ratio
Growth	Zero pair
Integer	

120 Chapter 1 Vocabulary Mathematician's Notebook, Inspiring Connections Course 2



Chapter 1 Closure

The last section of each chapter is a Chapter Closure. This section gives you the chance to reflect on the chapter, summarize your learning, and make mathematical and real-world connections. There are four options in each Chapter Closure. Your teacher will let you know which option(s) you are using to close the chapter.

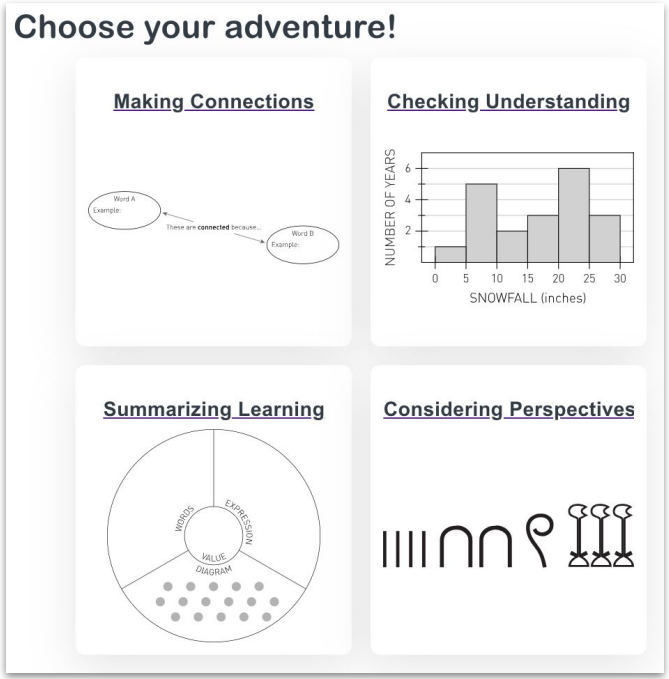
Mathematician's Notebook, Inspiring Connections Course 2 Chapter 1 Closure 121

*What do you **notice**?*

*What do you **wonder**?*

Chapter Closure

Authors' Vision



Teacher

opportunity to consolidate knowledge, connect ideas, and make extensions

time to reflect on understanding and identify areas to continue to work on

Chapter Closure

IC2 Chapter 2 Closure

Teacher

Jigsaw:

+ Read the introduction (3 paragraphs) and your assigned section.
+ Share one sentence to describe your assigned Chapter Closure activity.
+ With any remaining time: Discuss when and how you might use each type?

R - Making Connections

I - Considering Perspectives

C - Checking Understanding

O - Summarizing Learning and Reflection & Practice

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Chapter Closure

IC2 Chapter 2 Closure: Closure

Student

?

Chapter 2 Closure: Math Class Experiences

Beginning a new school year and learning many new concepts, ideas, and strategies can be exciting and maybe even a little scary.

Write about your experiences in class to this point. Think about all you have learned and experienced in math class so far this year and answer the following.

What is something you enjoyed in class—a specific concept or activity, a specific time with your team, or something that went well.

Write about a time you had an Aha moment or where something just clicked for you. Reflect on that and write about it here. Describe the event and what that did to your learning.

What is something you hope will happen in this course in the next few weeks?

Chapter Closure

Reflection

Learning Target:
I can describe the four types of chapter closure.

What do you want to remember about…

+ **Chapter Closure**

How does Chapter Closure support Collaborative Learning, Problem-Based Learning, and Mixed, Spaced Practice?

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

Agenda

Learning Target

Focus: Mixed, Spaced Practice

- Opening & Icebreaker
- Mixed, Spaced Practice
- Team Challenge
- Chapter Closure
- **Assessment**
- Closure

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

Assessment

CPM's Guiding Principles

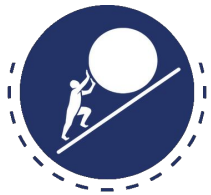
Students deepen their mathematical understanding when they are engaged with concepts over time.

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 that one method and more than one opportunity.

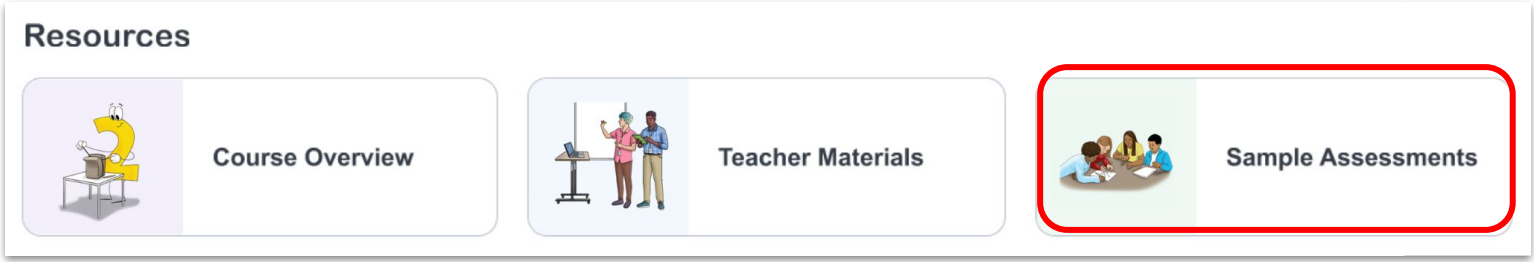


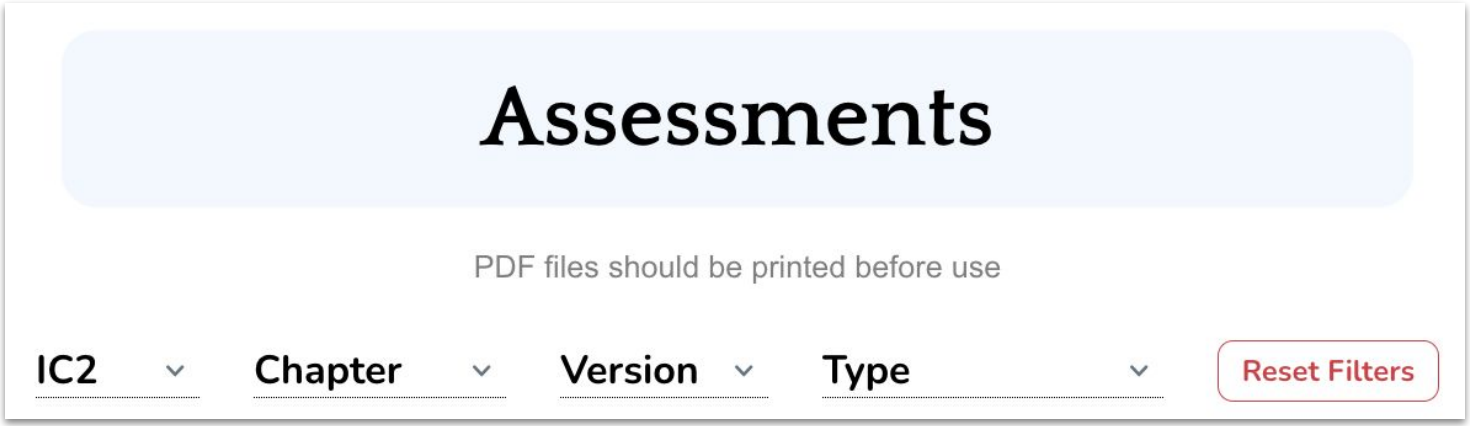
When students and stakeholders embrace a growth mindset, they understand that mastery takes time, effort, and support.

Assessment

Navigation

Teacher





Assessment

Individual Test

Think-Ink: *What do you **notice**? What do you **wonder**?*

RP.A: Understand ratio concepts and use ratio reasoning to solve problems. (from Chapters 2 and 4)

1. Kuki loves gumballs. Her favorite type is sold in packages of 8, with each package costing $1. She made the following table in order to calculate how many gumballs she could purchase for $5. Is her table correct? Explain your reasoning.

Cost ($)	Number of Gumballs
1	8
2	16
3	32
4	64
5	128

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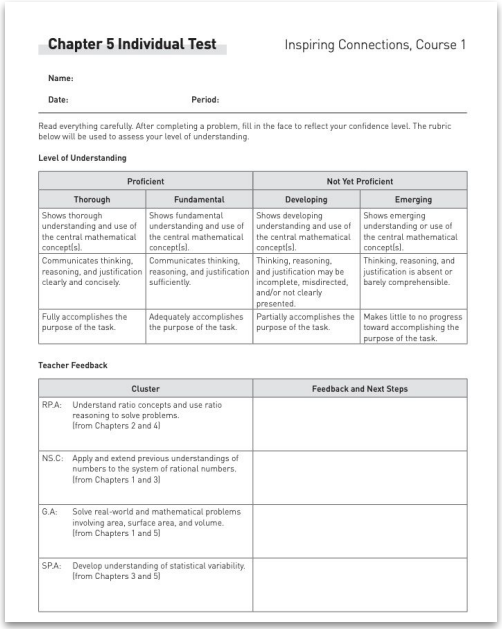

Chapter 5 Individual Test Inspiring Connections, Course 1

Name:

Date: Period:

Read everything carefully. After completing a problem, fill in the face to reflect your confidence level. The rubric below will be used to assess your level of understanding.

Level of Understanding

Proficient		Not Yet Proficient	
Thorough	Fundamental	Developing	Emerging
Shows thorough understanding and use of the central mathematical concept(s).	Shows fundamental understanding and use of the central mathematical concept(s).	Shows developing understanding and use of the central mathematical concept(s).	Shows emerging understanding or use of the central mathematical concept(s).
Communicates thinking, reasoning, and justification clearly and concisely.	Communicates thinking, reasoning, and justification sufficiently.	Thinking, reasoning, and justification may be incomplete, misdirected, and/or not clearly presented.	Thinking, reasoning, and justification is absent or barely comprehensible.
Fully accomplishes the purpose of the task.	Adequately accomplishes the purpose of the task.	Partially accomplishes the purpose of the task.	Makes little to no progress toward accomplishing the purpose of the task.

Teacher Feedback

Cluster	Feedback and Next Steps
RP.A: Understand ratio concepts and use ratio reasoning to solve problems. (from Chapters 2 and 4)	
NS.C: Apply and extend previous understandings of numbers to the system of rational numbers. (from Chapters 1 and 3)	
G.A: Solve real-world and mathematical problems involving area, surface area, and volume. (from Chapters 1 and 5)	
SP.A: Develop understanding of statistical variability. (from Chapters 3 and 5)	

Assessment

Individual Test

All sample tests are based on the CPM 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 table below 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 you should include.

Test Question	Cluster	Concept Introduced	Engagement of Concept in Reflection & Practice
1	RP.A	Lesson 2.2.2	Problems 2-38, 2-39, 2-46, 2-64, 2-71, 2-83, 2-101, CU 2-113, 3-7, 3-66, 4-61, 4-78, 4-102
2	RP.A	Lesson 4.3.2	Problems 4-86, 4-87, 4-95, 4-102, 4-103, 4-110, 5-45, 5-97, 5-118, CL 5-131, 6-32, 6-89, CU 6-118
3	NS.C	Lesson 3.4.1	Problems 3-119, 3-120, 3-127, 3-128, 3-134, 3-135, 4-8, 4-18, 4-47, 4-71, 4-97, CU 4-120, CU 4-121, 5-27, 5-34, 5-69, 5-81, 5-98
4	NS.C	Lesson 3.4.2	Problems 3-128, 3-134, 3-135, 4-8, 4-18, 4-47, 4-71, 4-82, 4-97, CU 4-120, CU 4-121, 5-27, 5-34, 5-69, 5-81, 5-98, CU 5-128
5	G.A	Lesson 1.2.4	Problems 1-81, 1-93, 2-19, 2-56, 2-74, CU 2-106, 4-46, 4-82
6	G.A	Lesson 5.2.5	Problems 5-77, 5-78, 5-88, 5-95, 5-96, 5-107, 5-117, CU 5-137
7	SP.A	Lesson 1.1.3	Problems 1-39, 1-40, 1-41, 1-49, 1-58, 1-66, 1-116, CU 1-125, CU 1-126, 2-22, CU 3-139, 5-17, 5-31, 5-44, 5-62, 5-115, CU 5-134
8	SP.A	Lesson 3.1.3	Problems 3-6, 3-55, 3-75, CU 3-140, 4-62, 5-32, 5-80, CU 5-134

Teacher

Potential Notices:

+ Rubric
+ Feedback and Next Steps
+ Clusters
+ Standards (NS, EE, etc…)
+ Table of Topic Introduction
+ Self-Assessment
+ Notes to Teacher

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

Assessment

Teacher Tips for Assessment

Complete the assessment before beginning the chapter.

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.

Assessment

Sequence

End of Chapter Planning

Team Challenge

Chapter Closure

Individual Assessment

Agenda

Session 7

Focus: Mixed, Spaced Practice

- Opening & Icebreaker
- Mixed, Spaced Practice
- Team Challenge
- Formative Assessment
- Assessment
- **Closure**

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

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*.

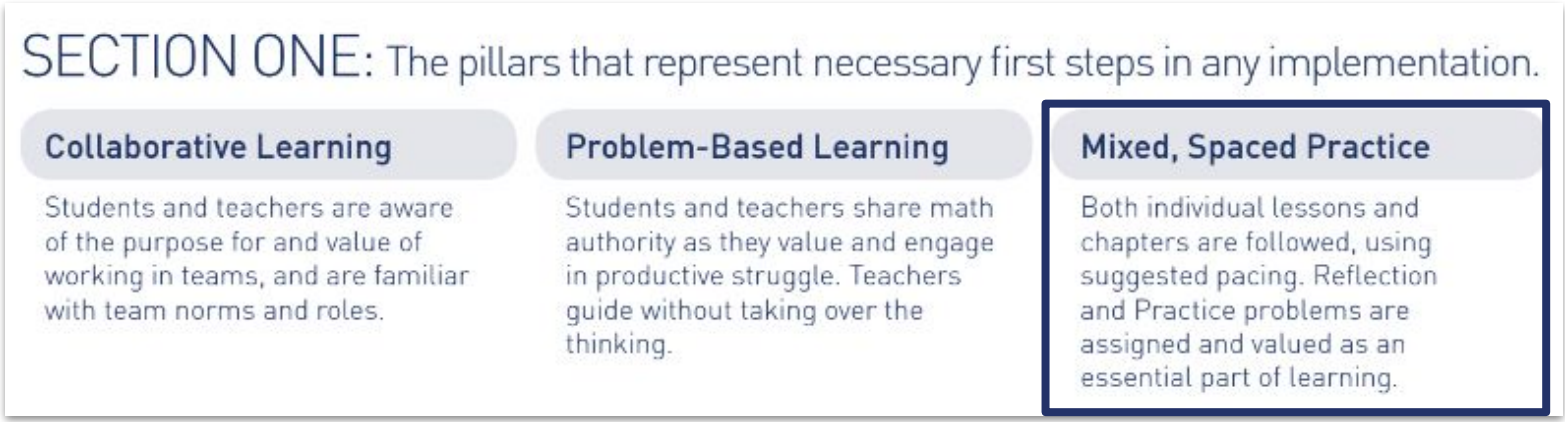
Closure

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

Three Research Pillars



Closure

- **Parking Lot**
- **Attendance**

  Enter passcode in the portal: **x x x x x x**
- **Next Steps:**
  - Use the “Course Content in Inspiring Connections” module to work through the Prelude and Chapter 1 as a student.
  - Locate and complete the Chapter 1 sample assessments.
    - Complete assessments before teaching the chapter.

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