Foundations for Implementation Learning Event

Inspiring Connections

Participant Notebook

Mathematician: _____

CPM Educational Program

Table of Contents

Learning Targets

Walkthrough Learning Targets

Learning Target	N–Not yet, W–Working on it Y–Yes, I can!
I can experience and explain the development of classroom community and mathematics content in my course.	
I can navigate the curriculum materials.	

Sessions 1 & 2 Learning Targets (Positive Classroom Culture)

Learning Target	N–Not yet, W–Working on it Y–Yes, I can!
I can use a task to get to know my students.	
I can identify embedded structures in *Inspiring Connections* that develop a positive classroom culture.	
I can reflect on how my beliefs might impact students and the culture of my classroom.	
I can use Math Chats to create a positive classroom culture.	
I can use a task to create an inclusive learning environment.	
I can summarize how *Inspiring Connections* supports the development of a positive classroom culture.	

Sessions 3 & 4 Learning Targets (Collaborative Learning)

Learning Target	N–Not yet, W–Working on it Y–Yes, I can!
I can identify how collaboration supports learning.	
I can reflect on how collaboration impacts students.	
I can develop effective study teams.	
I can identify ways to support collaboration in many venues.	
I can collect strategies for managing my *Inspiring Connections* classroom.	
I can summarize my learning about collaborative learning.	

Sessions 5 & 6 Learning Targets (Problem-Based Learning)

Learning Target	N–Not yet, W–Working on it Y–Yes, I can!
I can identify how routines and structures support learning.	
I can provide opportunities for students to become independent in pursuing problems. .	
I can connect problem-based learning to culturally responsive pedagogy.	
I can explain how problem-based learning supports long term retention	
I can explain how components of the Authors' Vision support problem-based learning.	
I can explain how the lesson sequence supports problem-based learning.	
I can provide opportunities for students to become independent in pursuing problems.	
I can reflect on the impact of problem-based learning.	

Sessions 7 & 8 Learning Targets (Mixed, Spaced Practice)

Learning Target	N–Not yet, W–Working on it Y–Yes, I can!
I can use multiple strategies to get to know my students.	
I can identify an assessment belief that I would like to be more intentional with in my practice.	
I can explain the role of Mixed, Spaced Practice in the curriculum.	
I can describe the purpose of a team challenge.	
I can identify Mixed, Spaced Practice in the curriculum.	
I can pace a lesson on the digital platform.	
I can access *Inspiring Connections* resources that support Mixed, Spaced Practice.	
I can describe the four types of chapter closure.	
I can prepare for the start of my school year.	
I can reflect on the learning event and plan my next steps for the school year.	

Classroom Culture

Session 1: Mathography, Lesson 0.1.1

IC1: Reflection & Practice 0-8 A mathography is a lot like a biography, except that while a biography describes your entire life history, a mathography focuses on the mathematics in your life. Use the following prompts to help you begin your mathography:. What is a math topic you enjoy? Write about a time when you struggled in math but eventually overcame your struggle and understood something new. Describe yourself to your [students]. What do you want them to know about you? You may wish to include things like how many siblings you have, who you live with, your favorite subjects in school, and your hobbies.

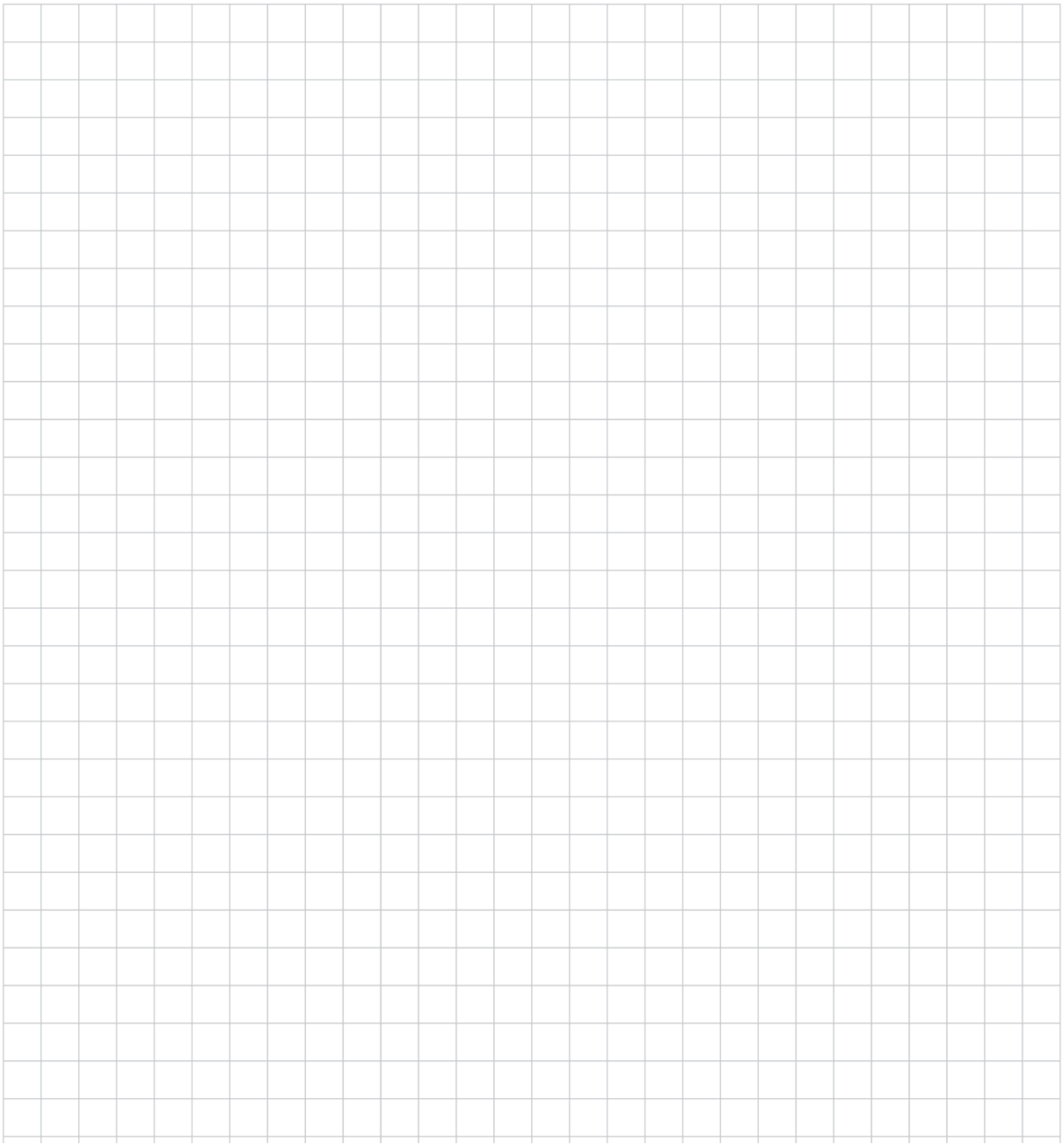
IC2: Reflection & Practice 0-9 (or Lesson 0.1.1C Resource Page) : A mathography is a history of mathematics in your life. Write a letter about yourself to your teacher]. The letter will help your teacher get to know you as an individual.

a. You: Introduce yourself using the name you like to be called. Describe your hobbies, talents, and interests. State your goals or dreams. What are you proud of? What else would you like to share?
b. You as a Student: How can school help you reach your life goals? Is college a necessary step for your future? Identify the school activities, teams, events, etc. you would like to be a part of this year. What activities or groups were you a part of in previous years?
c. You as a Math Student: Describe your most memorable moment in math and explain why you remember it. State your favorite math topic and name your least favorite. Explain how you feel about math this year. Feel free to include images or drawings to help explain your feelings or describe yourself and your experiences.

IC3: Lesson 0.1.1 Resource Page My name is __ and I go by __. My future goals include __. Things I do for fun are __. I am most proud of __. Something else I would like you to know about me is __. I show respect to others by __. People can show me respect by __. Last year in math class, I understood __. In math class, I have struggled __. I felt empowered in math class when __. I have felt disconnected in math class when __. I use math outside of school when __. When I am not at school, I seek math help by __. As I think about learning math this year, I feel __, because __.

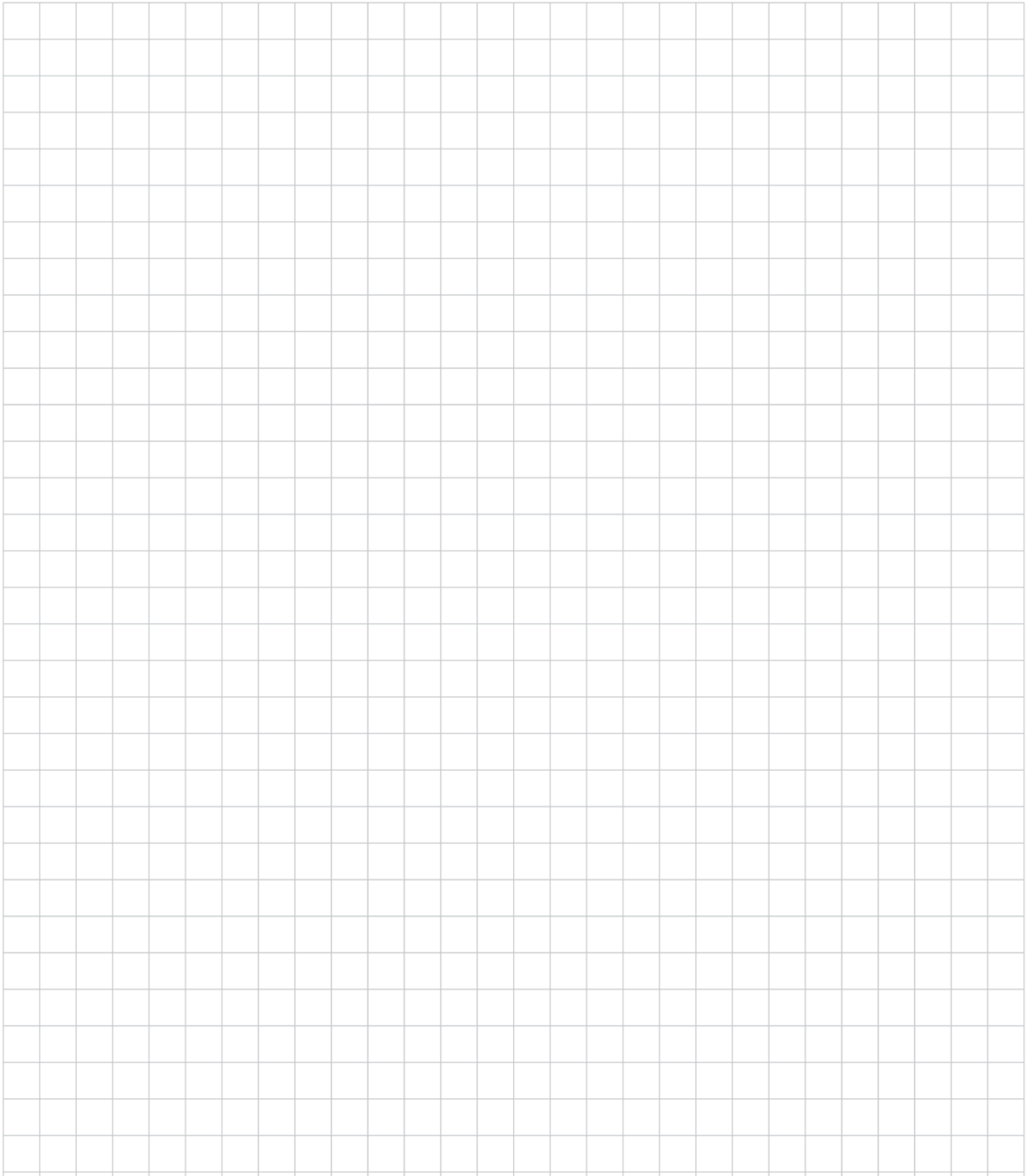
Session 1: Teachography

+ What is your philosophy of teaching and learning?
+ What do you value in your classroom environment?
+ What should students expect of you as a teacher? What do you expect from your students?
+ What do you want students to learn, know, and be able to do?
+ How do you want students to learn and show what they know?
+ How has your thinking about teaching changed over time? Why?
+ As a teacher, what is the most important thing to you and why?



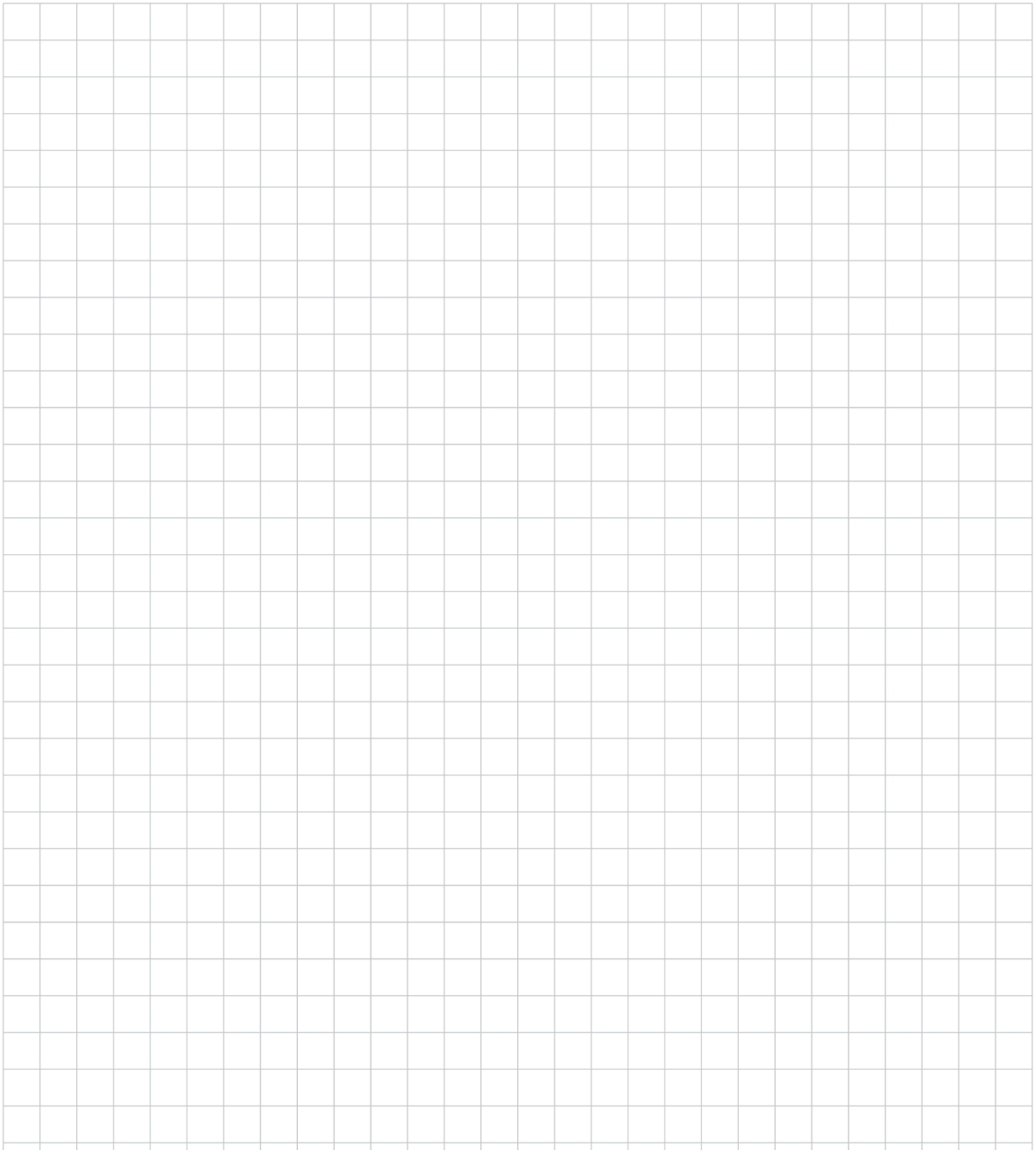
Session 1: Research Connections (4 A's Protocol)

(❗) What do you **agree** with in the text?
(?) What do you want to **argue** with in the text?
(☆)What parts of the text do you want to **aspire** to?
What **assumptions** does the author of the text hold?



How do Math Chats support a positive classroom community?

Dot Talk • Number Talk • Which One Is Unique?



IC1

0.1.7 Collaborative Learning Agreements
What do we need to work together?

Launch

When you work with others, what do you need?

a. Use the following sentence frames to organize your thoughts about teamwork.

When my team is not working well together, I need _____.

When working on a team, I would appreciate _____.

When working on a team, I would like to be able to _____.

I wish my teammates would _____.

I would like my teammates to show they are listening to me by ____.

b. Work with your team to categorize your needs.

Explore

Representative:

Investigator:

Coordinator:

Organizer:

Closure

Throughout this course, you will be asked to reflect on what and how you learn. The Reflection Journal titled "Lesson 0.1.7: Attitudes about Math" is located on the following page. Read the prompt and write a response.

Reflection Journal

Lesson 0.1.7: Attitudes about Math

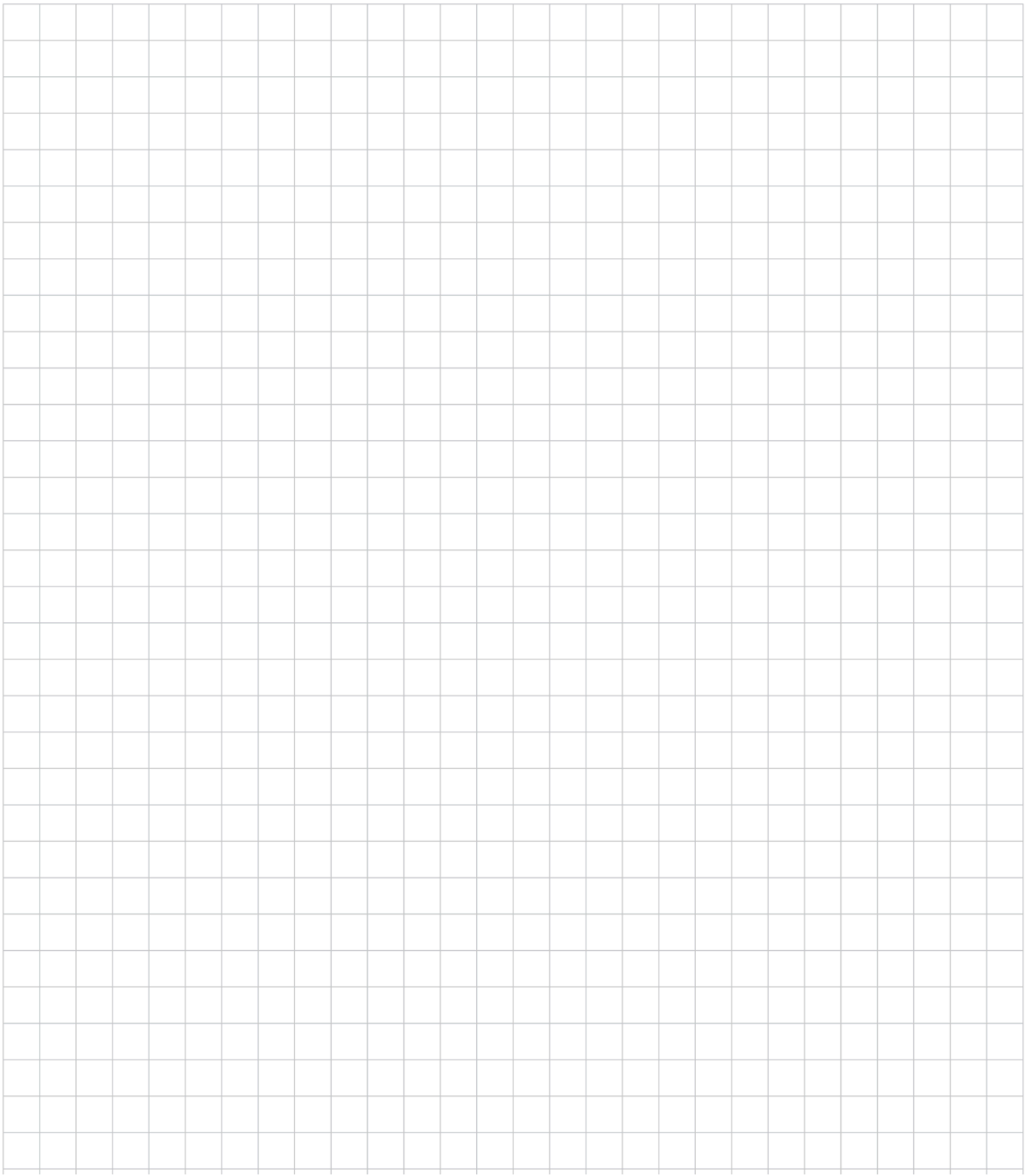
As you embark on a year of amazing mathematics, take time to do a self-assessment and reflect on your attitudes about math. As you progress through the course, you can refer back to this and see how you have changed.

Use the following sentence frames to reflect on your attitudes about mathematics.

- When I think of math, I think about _____.
- When I walk into math class each day, I feel _____.
- I do not feel confident with the following math topics: _____.
- I feel confident with the following math topics: _____.

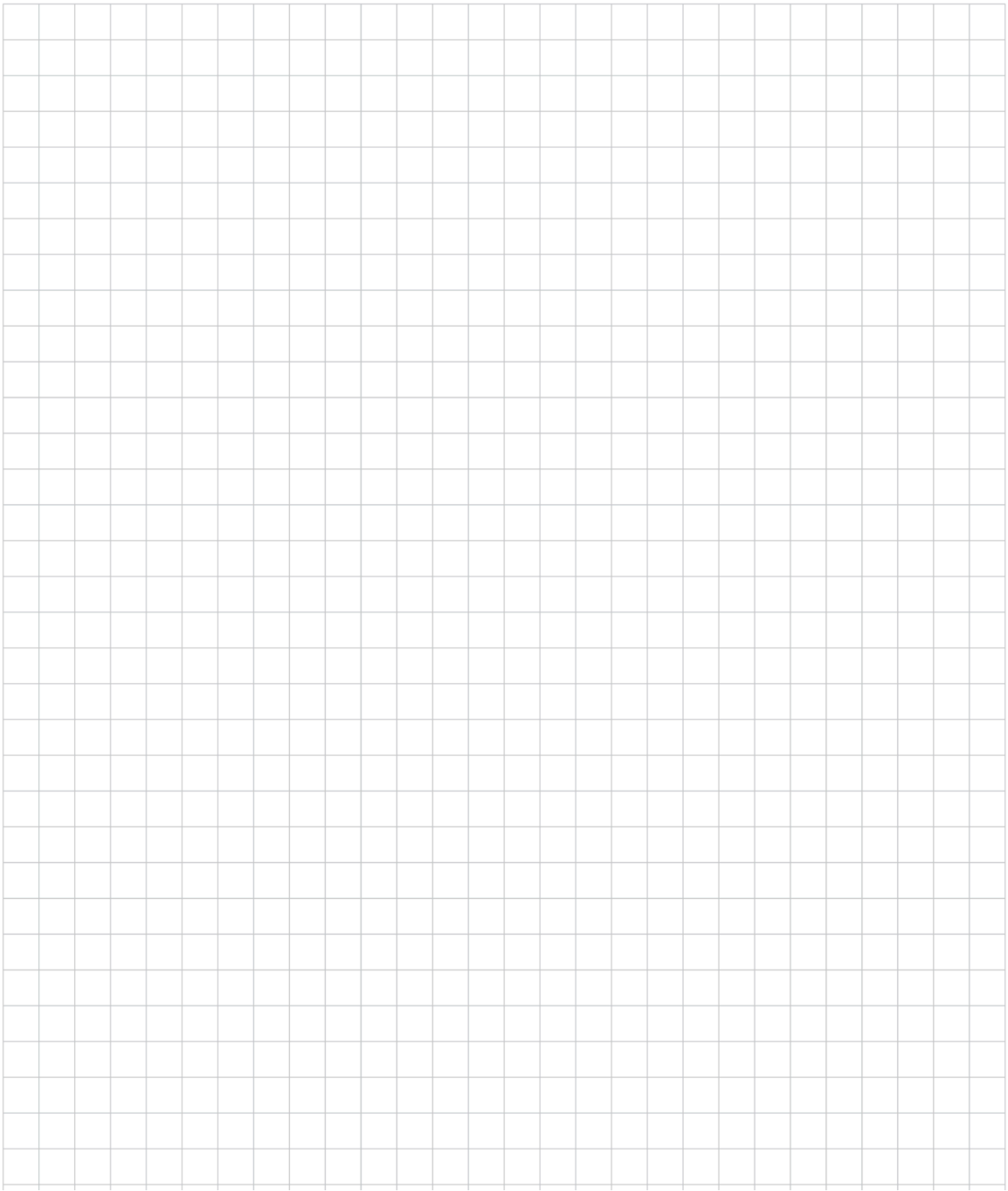
Session 2: IC1 Lesson 0.1.7 Debrief

How does this task create an inclusive learning environment?
What do you notice? What do you wonder?



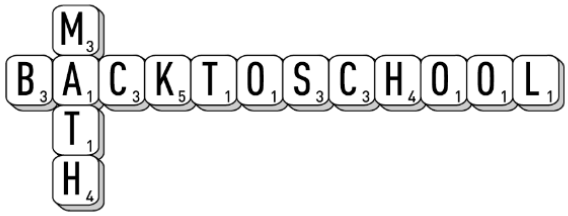
Session 2: Prelude Snapshot

Describe the chapter in one sentence.
Where do you find the resources to understand the storyline of the chapter?



1-5.

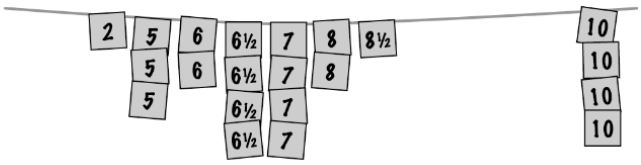
Kylo and Ren are playing a word game. After Ren placed the word *math*, Kylo placed *backtoschool*, which is not a word. If *backtoschool* had counted, how many points would Kylo have earned? (Hint: Each player calculates their score by adding the point values of all the letters in their word.)



1-6.

I can position whole numbers and decimal numbers on a horizontal number line.

Corban's class placed their shoe-size data on a clothesline. Use this clothesline to answer the following questions.



a. Corban insists that they move the sticky notes for size 8 slightly to the right. Why might this be?

b. Ashley says, *"We need to move the 2 to the left."* Kim asks, "*Why? The 2 is to the left of all the other numbers, so it is in the correct place."* Explain why Ashley wants to move the 2 to the left. How far to the left should it go?

c. Rosana, who wears a size 5½ shoe, joins the class. Which sticky notes would you need to move to place Rosana's shoe size on the clothesline? Where would you move them to?

d. Once Rosana's sticky note is added, Raj says that there are 22 shoe sizes represented on the graph. Santiago says that there are only 9 shoe sizes but 22 students. Explain why Santiago is correct.

1-7. (from Lesson 0.1.3)

Which of these figures has an odd number of dots? Explain how you can determine whether the number of dots is even or odd without having to count all of the dots.

FIGURE A

FIGURE B

FIGURE C

FIGURE D

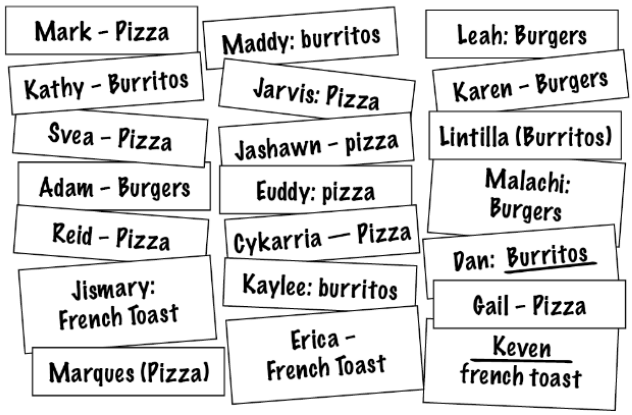
1-9.

Helping others understand a topic is an important aspect of being a good classmate. Think about the last week of math classes, including today's lesson. Write about one time you helped a classmate understand something better. What do you want your teacher to know about this experience?

1-8. (from Lesson 0.1.1)

Damon asks all his classmates about their favorite lunch food in order to answer the question "Which lunch food is most popular at my school?" Which of the following data representations makes answering the question easiest? Which representation makes answering the question hardest? Explain your thinking.

A.

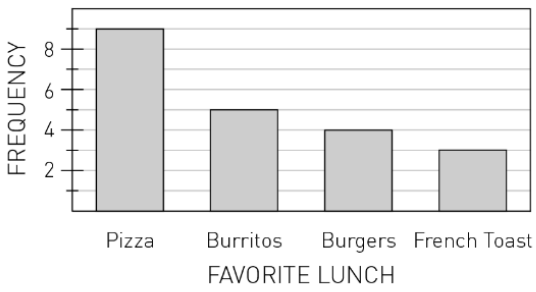


B.

Name	Favorite Lunch
Adam	Burgers
Leah	Burgers
Karen	Burgers
Malachi	Burgers
Dan	Burritos
Kathy	Burritos
Lintilla	Burritos
Maddy	Burritos
Kaylee	Burritos
Jismary	French Toast
Keven	French Toast

Name	Favorite Lunch
Erica	French Toast
Mark	Pizza
Svea	Pizza
Reid	Pizza
Marques	Pizza
Jarvis	Pizza
Jashawn	Pizza
Euddy	Pizza
Cykarria	Pizza
Gail	Pizza

C.



Collaborative Learning

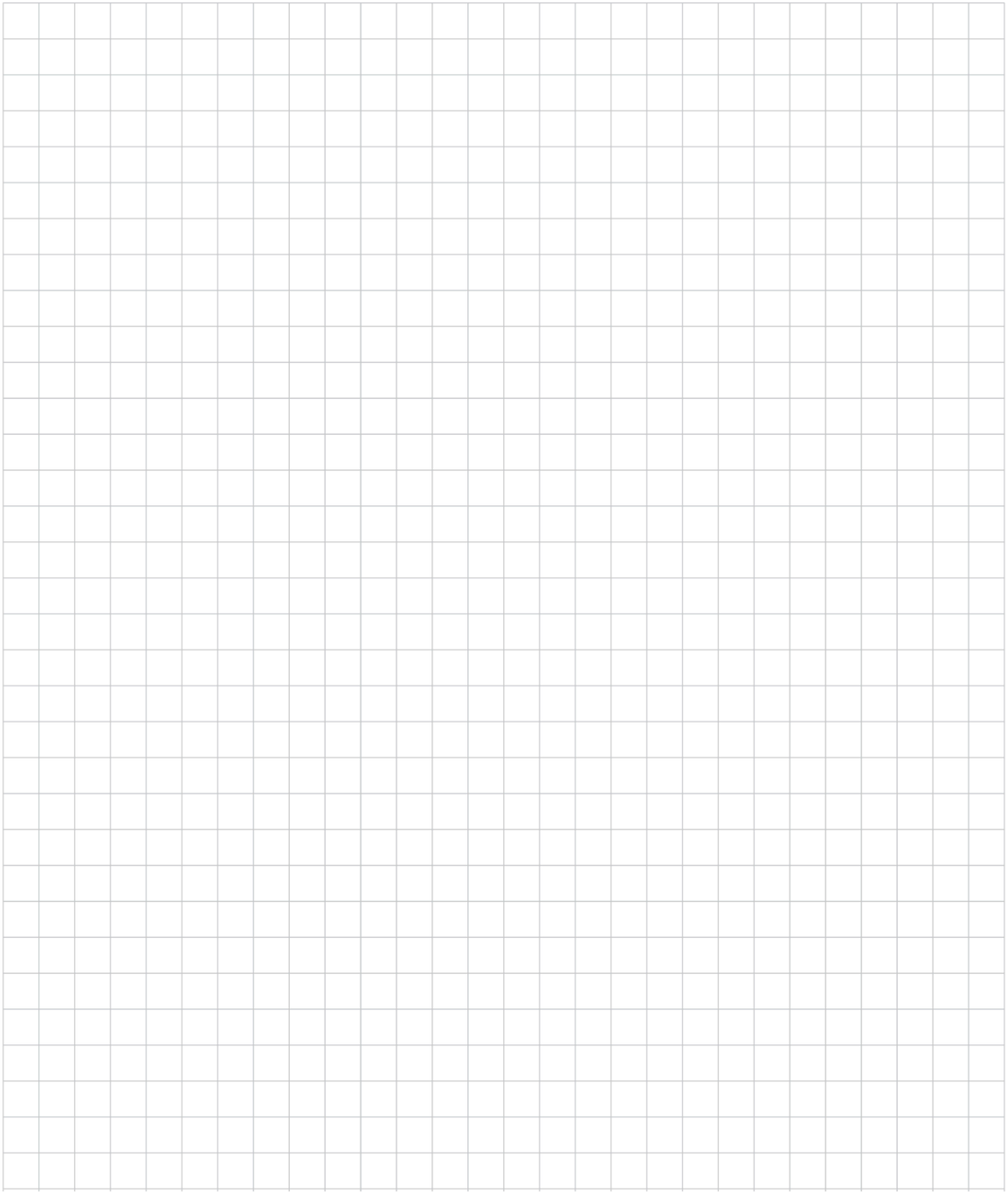
Session 3: Research Connections & Collaborative Learning Pillar (4 A's Protocol & Golden Line)

+ 4 A's: What do you **agree** with in the text? / What do you want to **argue** with in the text? / What parts of the text do you want to **aspire** to? / What **assumptions** does the author of the text hold?
+ Golden Line: Highlight or note parts of the research that raise questions for you, confirm what you already believe, make you say "aha", conflict with your beliefs, cause you to reconsider prior assumptions.

Session 3: Effective Study Teams

How does implementing _____ support effective study teams?

Team Roles • Visibly Random Teams • Three Pass Promise • 5 Ways to Stop Thinking for Your Students



Comparing Mixed Numbers, Fractions, and Decimal Numbers

IC1
1.1.2 Where do these numbers belong on this line?

Launch

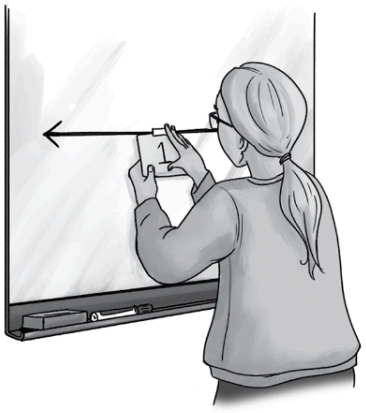
Mathematicians look for and make use of structure. Your teacher will display a dot arrangement for a *Dot Talk*. Think about how you might use the structure of the dot arrangement in your counting strategy. Silently determine the number of dots without counting each dot. Hold a hand close to your chest and extend one finger when you have an answer and a counting strategy.

Explore

1-10.

1.5, $1\frac{1}{5}$, $\frac{11}{5}$

1-11.



Closure

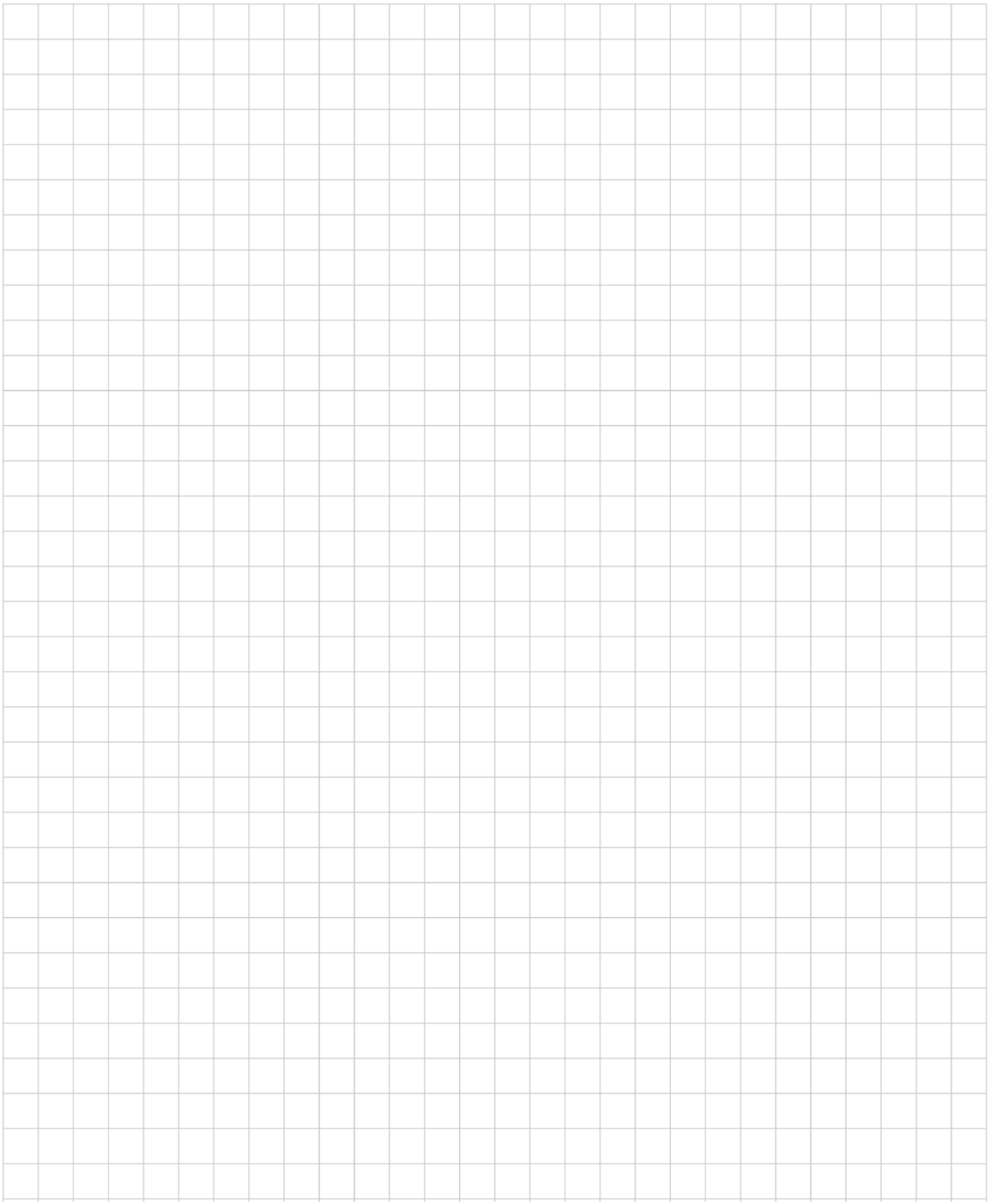
Your teacher will lead your class through a clothesline activity.

After the activity, write a note to your future self in your Mathematician's Notebook about what you did and what you learned. Use the following sentence frames as prompts to start your thinking, and then add anything that will help you remember what you learned today.

- When hanging _____ on the clothesline, I knew _____ so I _____.
- When placing numbers on the clothesline, it is important to pay attention to _____ because _____.
- When our class discussed hanging _____ on the clothesline, someone said _____ which made me think _____.

Session 4: IC1 Lesson 1.1.2 Debrief

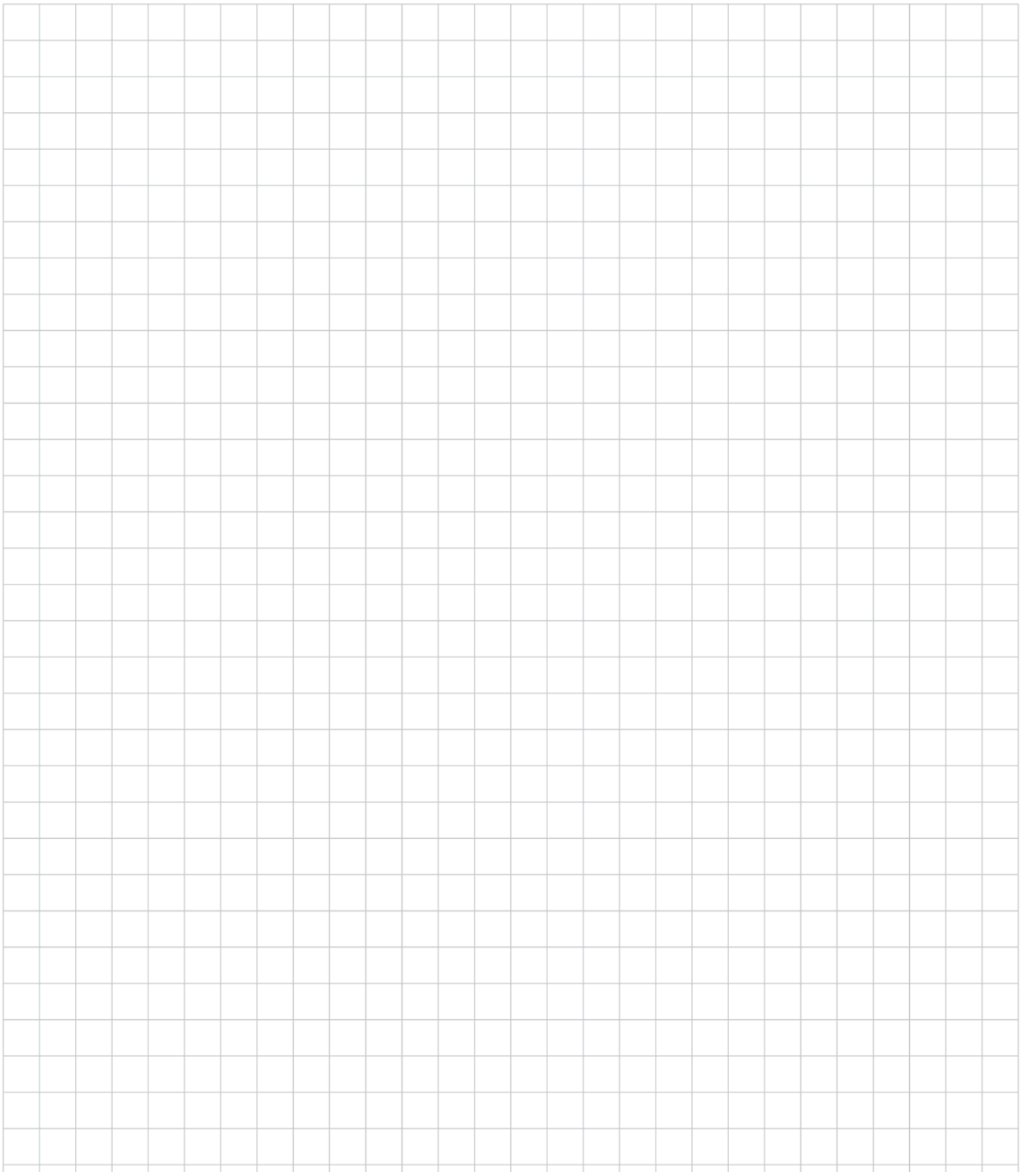
How does *Inspiring Connections* support a collaborative classroom?
How did collaboration support your learning?
What did the teacher do to support collaborative learning during the different parts of the lesson?



Session 4: Chapter 1 Snapshot

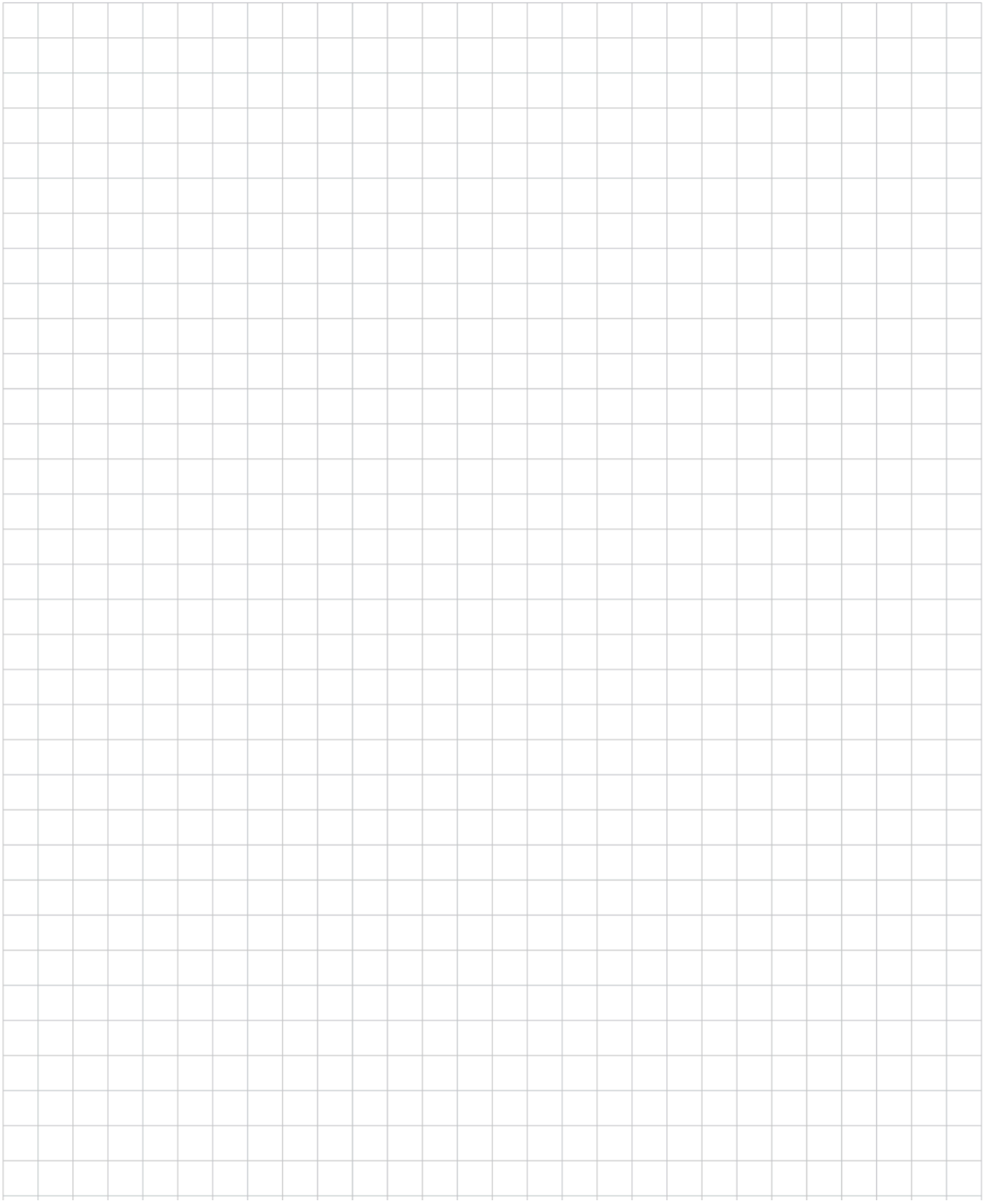
Describe the chapter in one sentence.

Where do you find the resources to understand the storyline of the chapter?



Session 4: How will you manage the following?

Team Roles • Visibly Random Teams • Mathematician's Notebook
VNPS • Transitions • Reflection & Practice



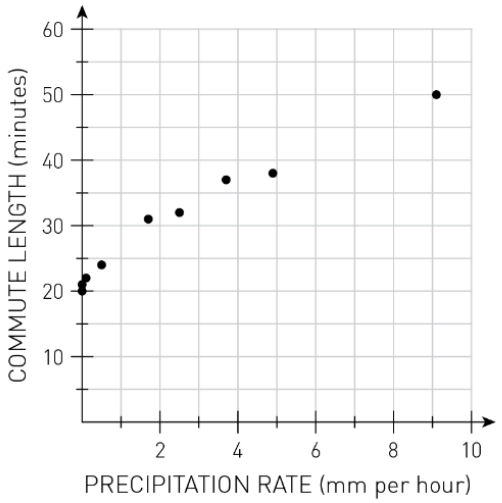
1-20.

Mathematicians reason abstractly and quantitatively. Before taking a break, Hu completed $\frac{4}{7}$ of their Reflection & Practice, and Jermaine completed $\frac{3}{5}$ of theirs. Who is closer to completing their homework?

1-21.

I can use a scatter plot to make predictions.

Francesca's commute usually takes 20 minutes, but it takes longer when the weather is rainy. Francesca creates the following scatter plot comparing the precipitation rate (in millimeters of rain per hour) to how many minutes her commute takes.



Francesca sees that the next day's forecast calls for 7 millimeters of rain per hour. She predicts it will take 45 minutes to get to work. Use the scatter plot to justify her prediction. Show or explain your thinking.

1-22.

Use the scatter plot from problem 1-21 to predict how many minutes Francesca's commute will take if the precipitation rate is 10 millimeters per hour.

1-23. (from a previous course)

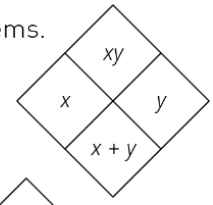
Solve each equation for x and check your solution. **For additional support, refer to the Methods & Meanings box "Solving Equations" on page 302.**

a. $-8x = 20$

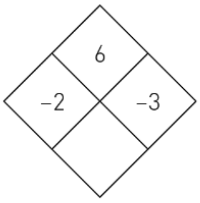
b. $25 = 6x - 1$

1-24. (from a previous course)
Write three fractions that are equivalent to 24%.

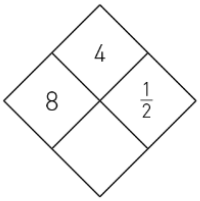
1-25.
Complete the following Diamond Problems. The pattern used in the Diamond Problems is shown.



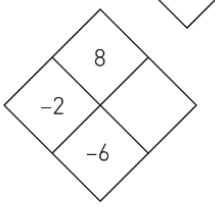
a.



b.

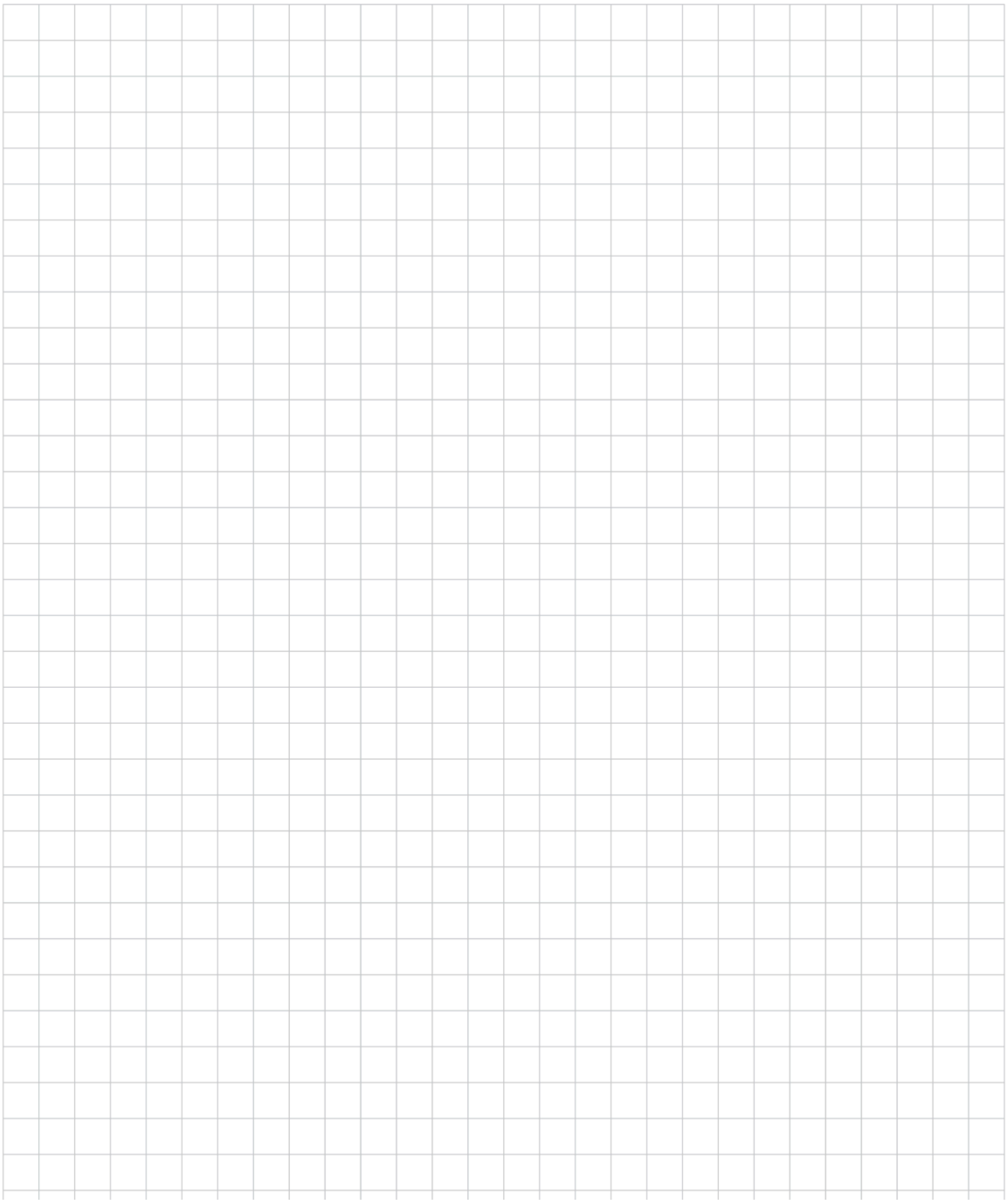


c.



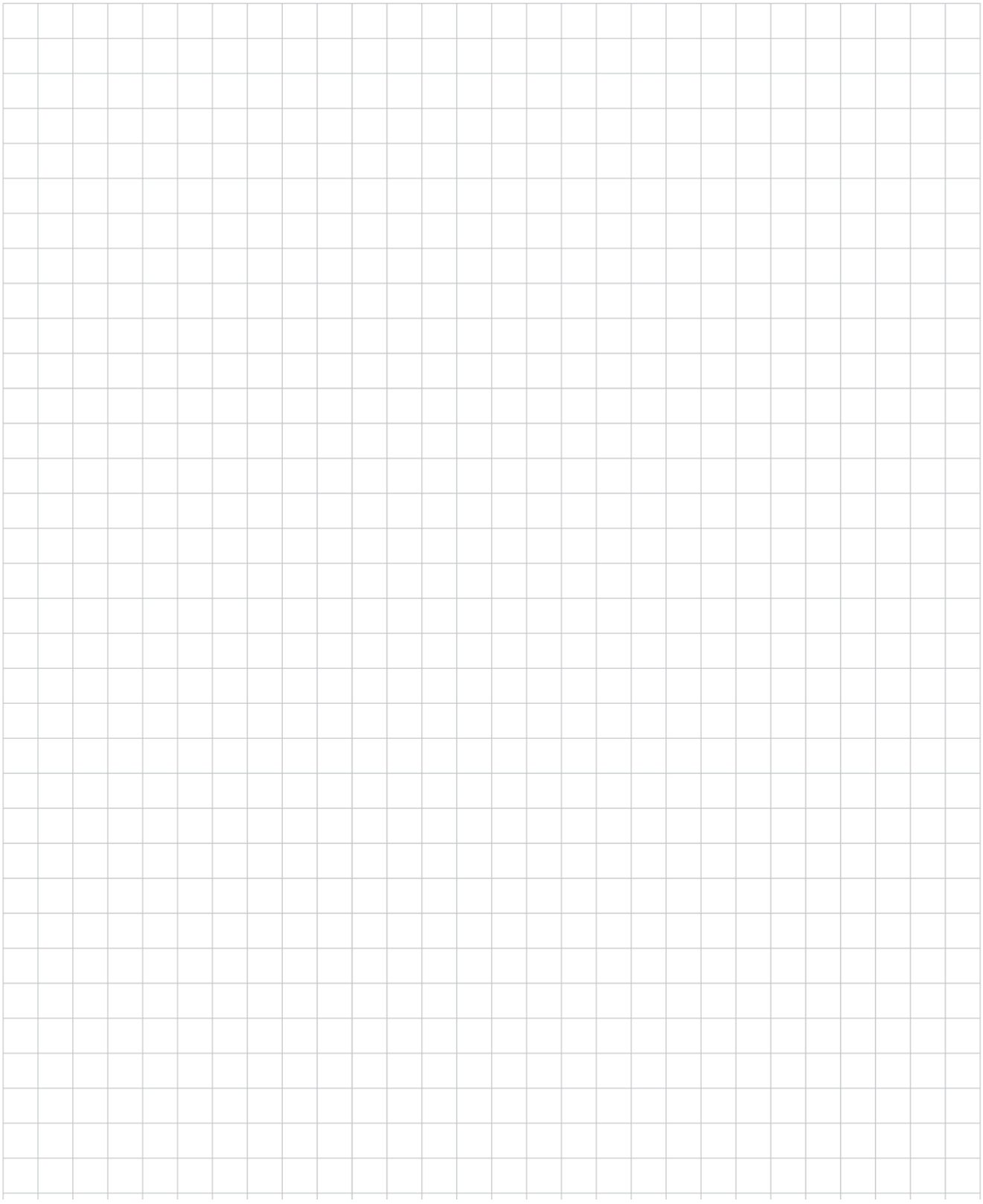
Problem-Based Learning

Session 5: Talk-Write-Discuss (Data Chat)



Session 5: Research Connections and Problem-Based Learning Pillar (Discussion Rounds)

What is math authority and why is it important in problem-based learning?



Session 5: Venues Jigsaw

How does each venue support problem-based learning? Record your notices and wonders about each of the venues.

Consider using the sentence frames to frame your thinking.

I think _____ because _____. • *Something I noticed was _____.* • *Something I wonder is _____.*
A question I have is _____. • *_____ supports problem-based learning because _____.*

Digital Platform

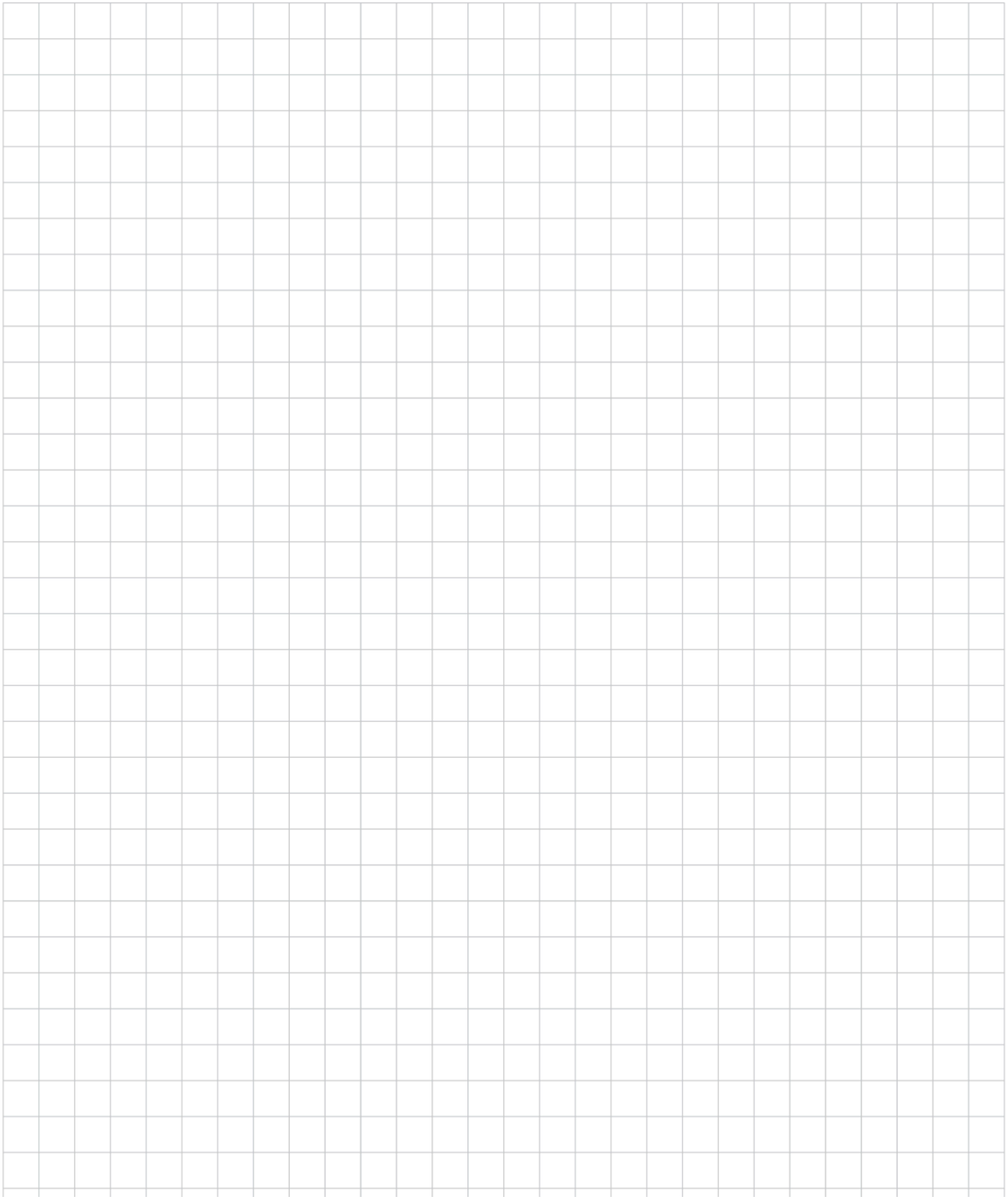
Mathematician's Notebook

Vertical Non-Permanent Surfaces

Session 5: Lesson Sequence

How does the lesson sequence support problem-based learning?

Door Question • Launch • Explore • Closure • Reflection & Practice



IC3
1.1.4 Organizing Data in a Scatter Plot
Is there a relationship?

Launch

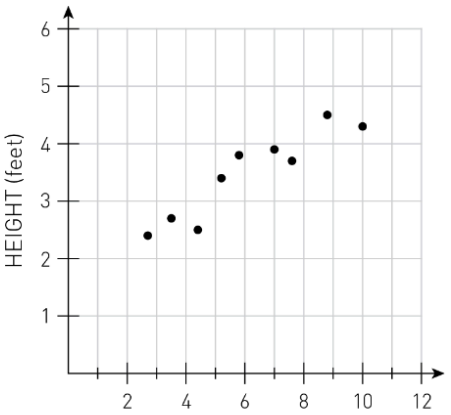
Prepare your team for a Data Chat.

Explore

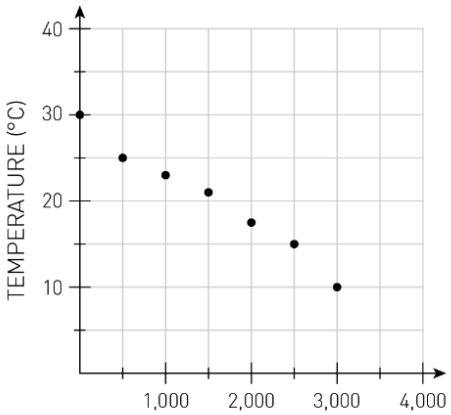
1-26.

Odometer Reading (thousands of miles)	49	66	37	92	48	40	63	17	98
Price (thousands of $)	27	14	30	10	40	39	26	31	5

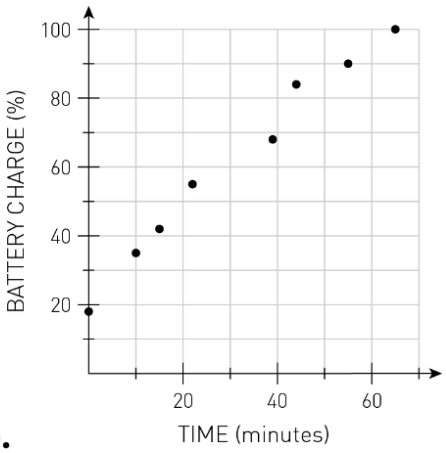
1-27.



a.



c.



b.

Closure

The Reflection Journal titled "Lesson 1.1.4: Revising My Thinking" is located on the following page. Read the prompt and write a response.

Reflection Journal

Lesson 1.1.4: Revising My Thinking

In her book *Around the Way Girl*, Taraji P. Henson wrote, "No matter how often you fall from grace, what matters most is how many times you get up." There will undoubtedly be times this year in class when the math is new, and maybe challenging for you. How you handle those times can help you thrive. Take time to reflect and write on how you respond to challenges. As you write, think about these things.

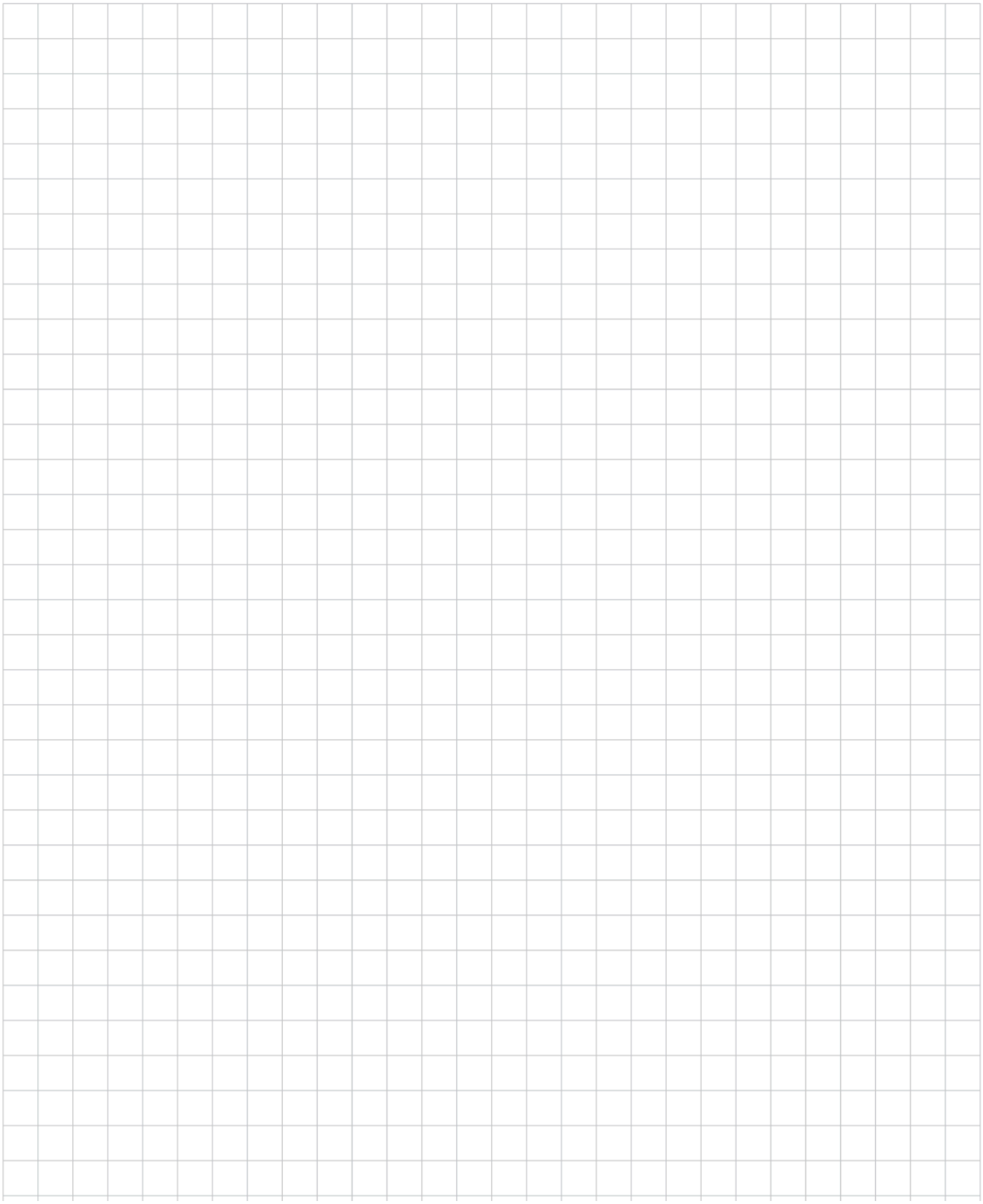
- What causes you to want to give up?
- How do you typically respond if you are not successful on your first attempt at trying something new?

Session 6: Embedded Supports (Routines & Strategies)

Record your rough draft ideas by creating a written summary of notices and wonders about your assigned routine or strategy. Consider how they support problem-based learning.

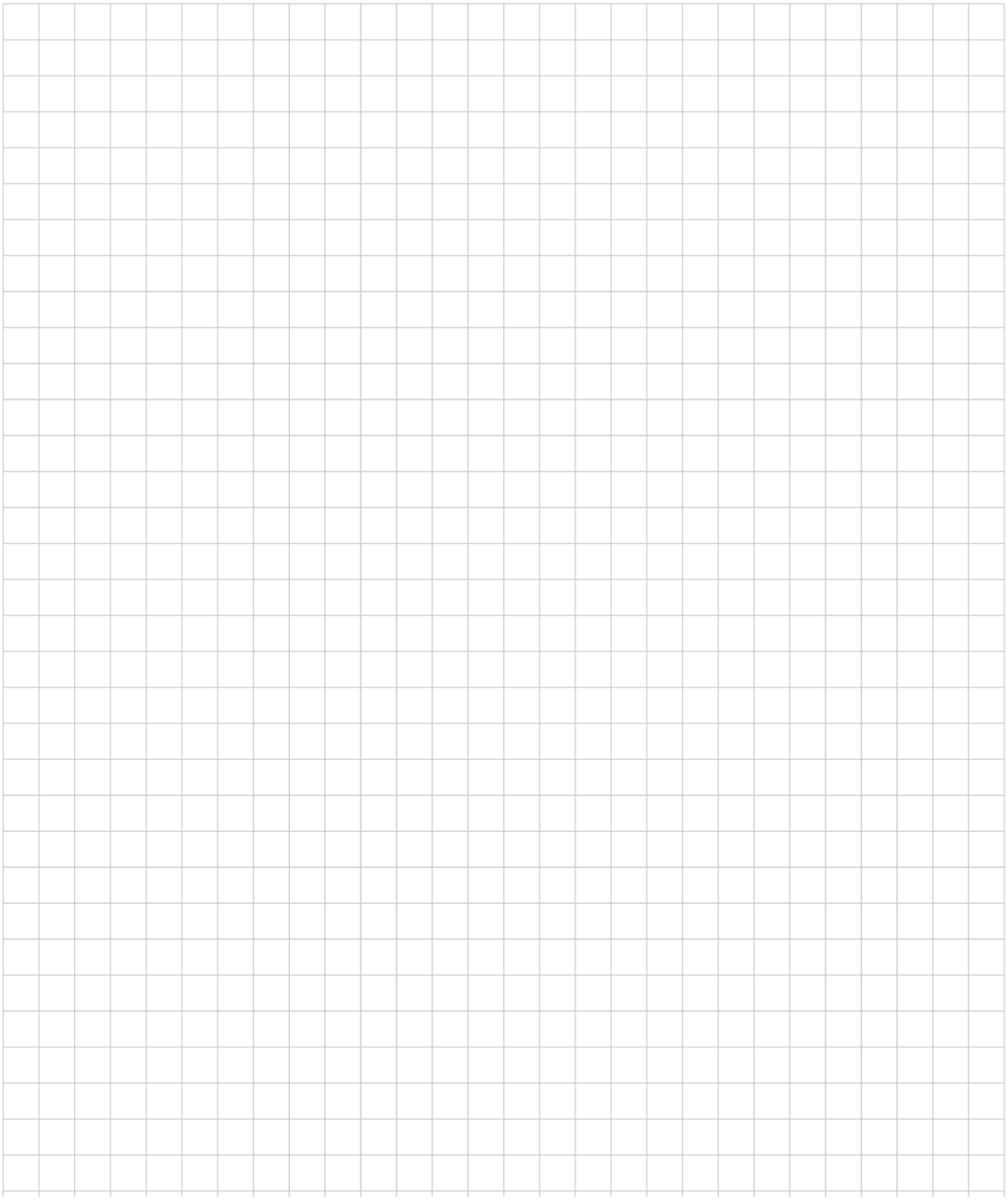
Session 6: Mathematical Language Routines & Strategies

What do you want to remember about Mathematical Language Routines (MLR) & Strategies? How do MLR & Strategies connect to problem-based learning?



Session 6: Preparing to Teach

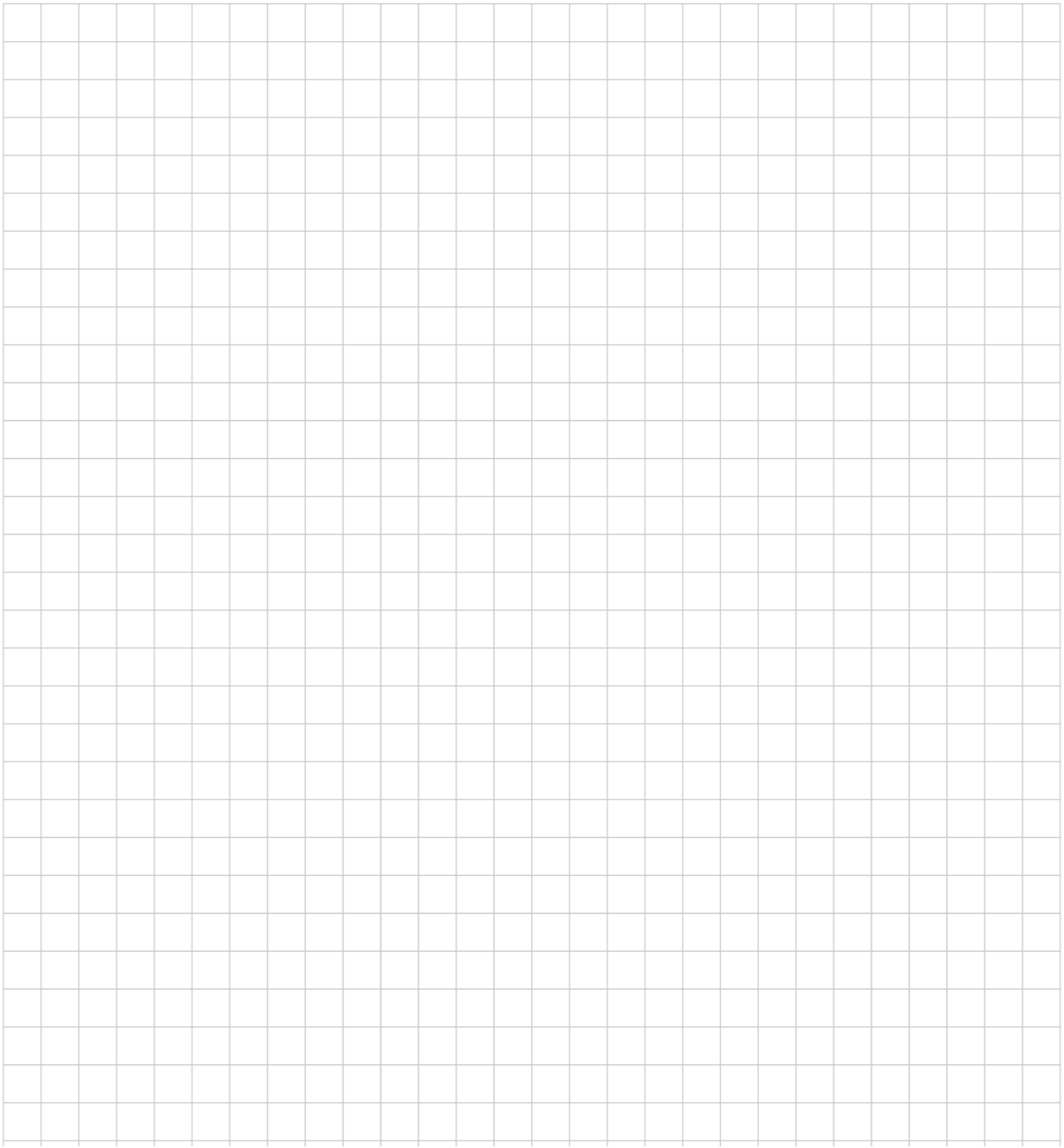
+ What do you want to remember about the Authors' Vision when preparing to teach?
+ What teacher moves do you want to focus on when preparing to teach?
+ How will I ensure that students experience the three lesson components (Launch-Explore-Closure)



Mixed, Spaced Practice

Session 7: Mixed, Spaced Practice Pillar (Connect-Extend-Challenge)

+ 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?



Session 7: IC1 Chapter 2 Team Challenge

Inspiring Connections, Course 1 Name: _____

Chapter 2 Team Challenge Date:_____Per:_____

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 Chapter 2)*	
Collaboration and teamwork	

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

1. Mercedes has a bag of 42 marbles. Each marble is either red, blue, green, or yellow. Use the clues below to determine the number of marbles of each color in the bag.

    - The ratio of yellow marbles to red marbles in the bag is 2:1.
    - The ratio of green marbles to blue marbles in the bag is 3:5.

How many of each color of marble does Mercedes have? Show your work.

2. Work with your team to create a tape diagram that could be used to solve a ratio problem. Then, use that diagram to complete the parts below.

    a. Write a story that goes with your tape diagram.

b. Explain how your tape diagram connects to your story.

c. Write several mathematical questions you could ask another team about your story that could be answered using the diagram. Then answer the questions, showing your work and including an explanation in words.

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 5: Use appropriate tools strategically.
MP 2: Reason abstractly and quantitatively.	MP 6: Attend to precision.
MP 3: Construct viable arguments and critique the reasoning of others.	MP 7: Look for and make use of structure.
MP 4: Model with mathematics.	MP 8: Look for and express regularity in repeated reasoning.

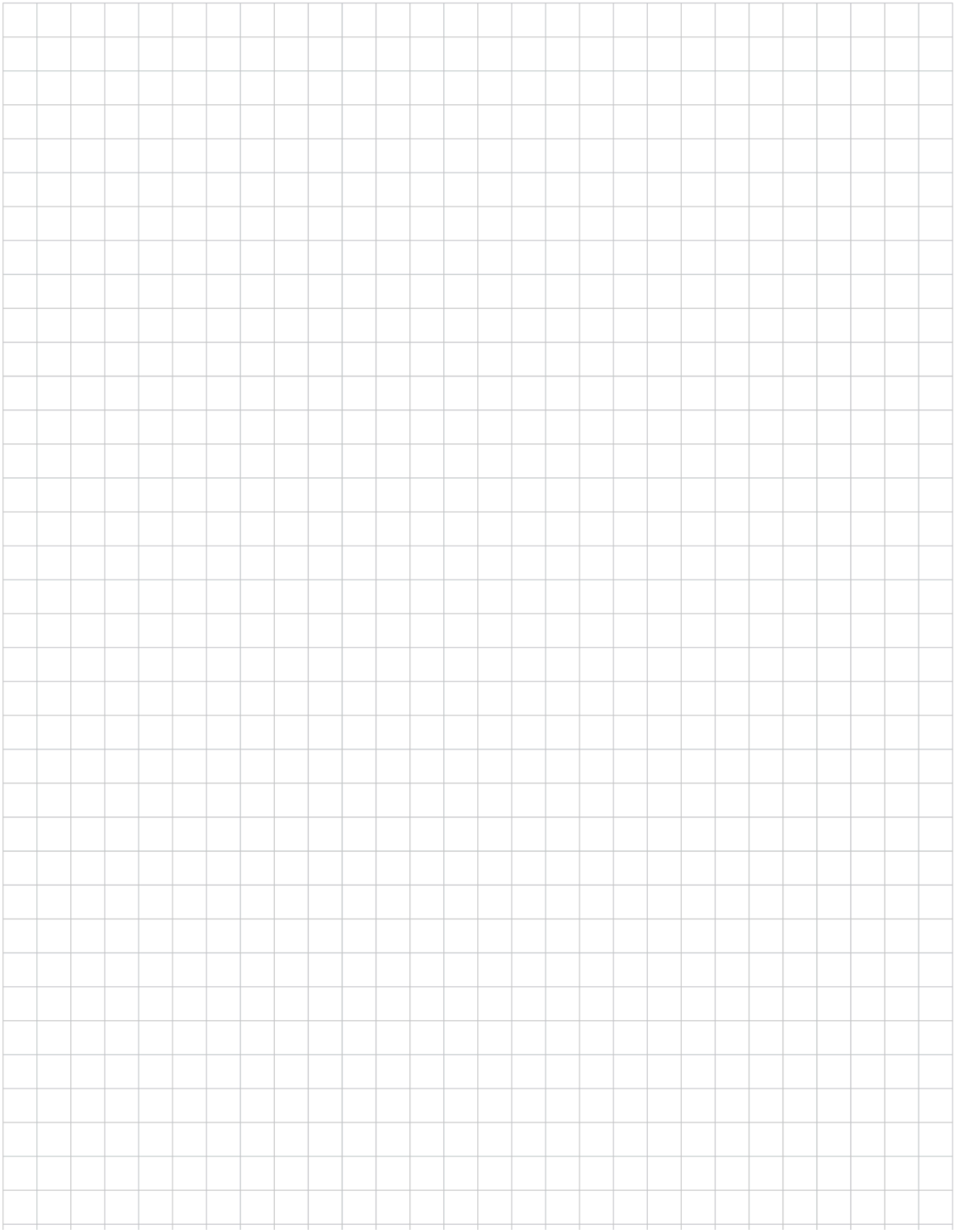
Session 7: Chapter Closure Graphic Organizer

What do you want to remember about each Chapter Closure option?

When would you choose to complete _____?
What might you need to consider when implementing _____?
How does _____ connect to Mixed, Spaced Practice?

Making Connections	Considering Perspectives
Checking Understanding	Summarizing Learning

Reflection & Practice



Session 8: Notice & Wonder Jigsaw and Carousel

Examine your assigned topic. How does the resource connect to Mixed, Spaced Practice and the Assessment Beliefs? Write down a Notice & Wonder.

Reflection & Practice *Mathematician's Notebook*	Assessment Clusters *Digital Platform*

Learning Targets
Mathematician's Notebook

Notes to My Future Forgetful Self