



Reading Strategies for the Math Classroom

Virtual Session

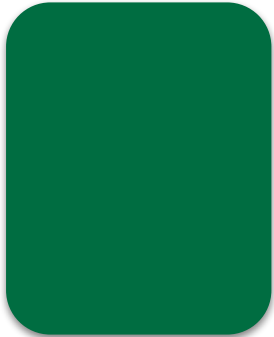
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Welcome!

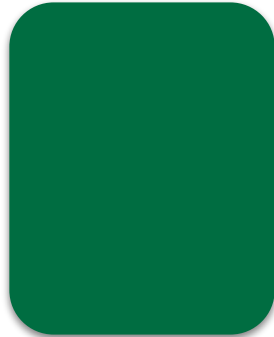
CPM Virtual Learning Series



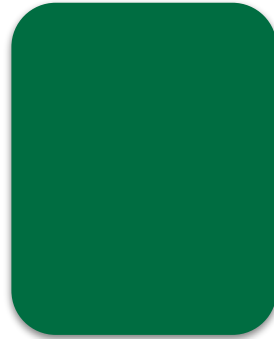
Session Facilitators



Name



Name



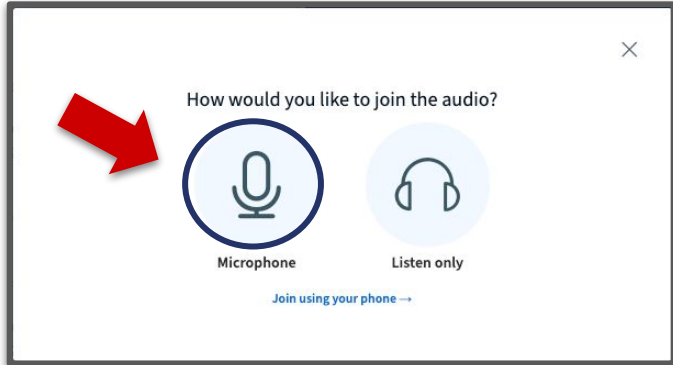
Name

**Regional
Professional
Learning
Coordinator**

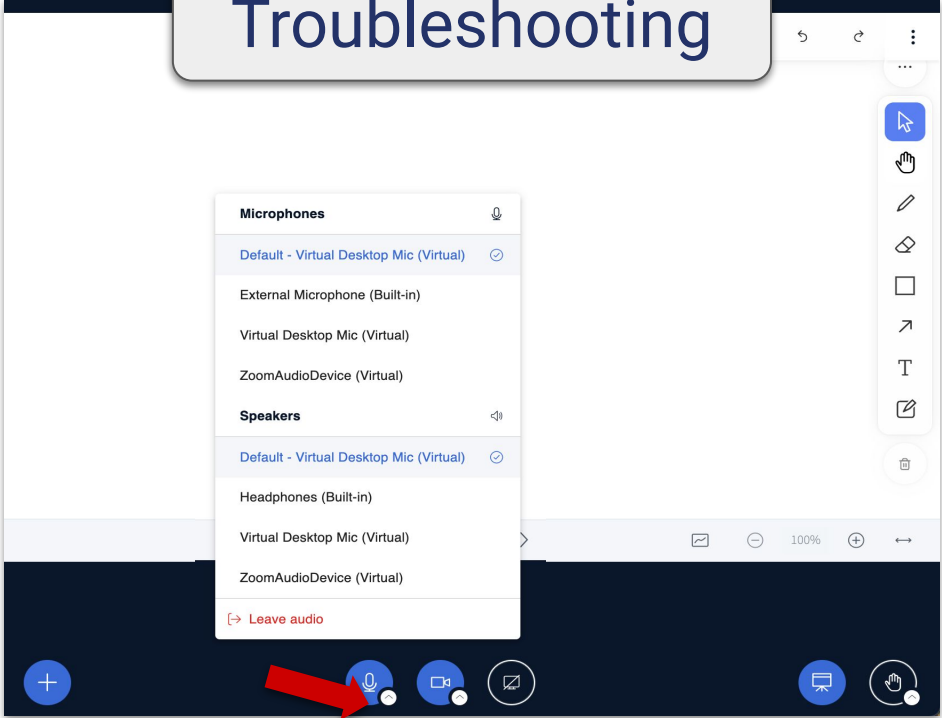
Tech Tip



Audio



Troubleshooting



Opening

Session Outcomes



Together we will:

Consider the thinking processes involved in reading a math problem

Experience structures and routines that support reading in mathematics

Reflect on supporting sensemaking in problem-based learning

Agenda

Reading Strategies for the Math Classroom



- Opening
- Icebreaker
- Why do we read in math?
- How do we read in math?
- Closure

Equity

Equity Principles



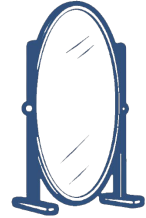
The goal of teaching is to help all students transition from dependent to independent learners.



Relationships are of vital importance.



Student uniqueness is an asset, not a deficit.



Reflection is a crucial part of growth.

These principles guide CPM's vision and mission of More Math for More People.

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

Reading Strategies for the Math Classroom



- Opening
- Icebreaker
- Why do we read in math?
- How do we read in math?
- Closure

Learning Target: I can read different kinds of texts.

Icebreaker

What You Missed That Day



Your Task:

Read the poem to yourself. Be ready to share your thinking and reactions with your team.

You might consider:

- + What do you think the poem is about?
- + What does the poem mean to you?
- + What lines or phrases do you connect to?
- + How is this similar to or different from your experiences in school or life?

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Learning Target: I can reflect on why literacy is important in math class.

Why do we read in math?

Do we really need to teach this?



Deep disciplinary learning is gained through language, the primary medium of instruction.

Ideas take shape through words, texts, illustrations, conversations, debates, examples, etc.

Content teachers (implicitly/explicitly) teach the language of their discipline.

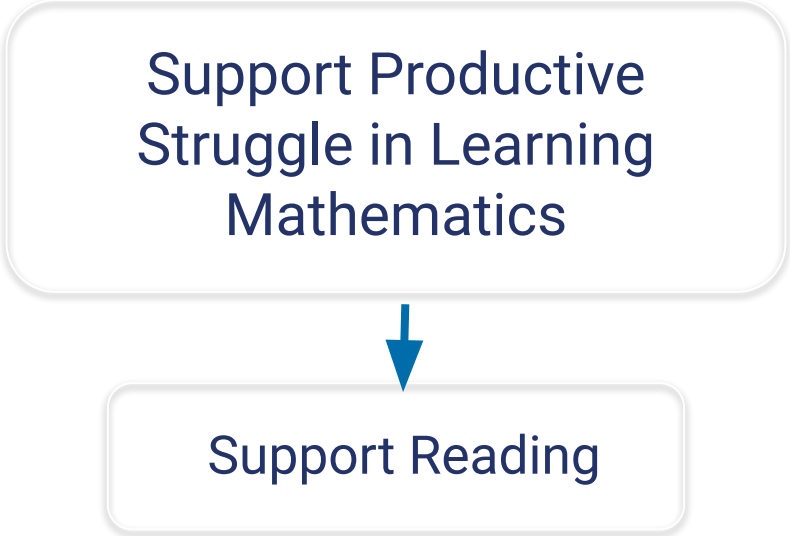
Zweirs, J. (2017, February 28). *Principles for the Design of Mathematics Curricula: Promoting Language and Content Development.*

Supporting Reading Is Effective Teaching



Effective Mathematics Teaching Practices

CPM EDUCATIONAL PROGRAM
Implementation Support
Implementation Progress Tool



How To Read a Math Problem

Self-Reflection



Your Task:

1. **Read:**
 - a. Pre-Calculus 1-19 (Lesson 1.1.3)

2. **Reflect:**
 - a. What did you pay attention to while you read?
 - b. How many times did you read it?
 - c. If you re-read, how did you read it differently each time?
 - d. How did you process the information?
 - e. What did you do when you got confused?



Text Complexity

Why is this so hard?

- + Simple texts state the main idea, then provide details.
- + More complex texts provide details, then the main idea.
- + CPM problems generally:
 - + Don't ask the question until the end.
 - + Use a statement instead of a question to pose the task.
 - + Use contexts students may or may not know about.
 - + Use rigorous mathematical vocabulary.
 - + Are not "word problems."

Supporting Productive Struggle

Amplify, Not Simplify



Teachers should make language more “considerate” to students by **amplifying** rather than simplifying speech or text. **Simplifying includes avoiding** the use of challenging texts or speech. **Amplifying means anticipating where students might need support** in understanding concepts or mathematical terms, and providing multiple ways to access those concepts and terms.

Walqui, A., & Lier, L. V. (2010). *Scaffolding the academic success of adolescent English language learners: A pedagogy of promise*. WestEd.

Agenda

Reading Strategies for the Math Classroom



- Opening
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- Why do we read in math?
- How do we read in math?
- Closure

Learning Target: I can use strategies to develop my students' thinking about text.

Supporting Reading in Math

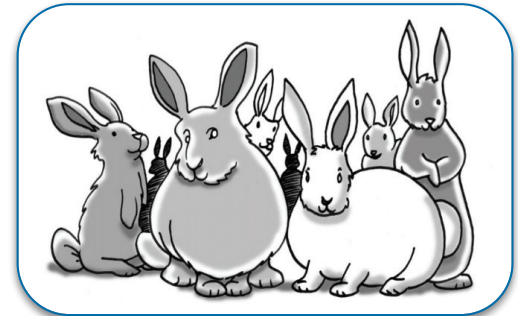
Telling the Story of the Problem



Tell the Story of the Problem

Deep disciplinary learning is gained through language, the primary medium of instruction.

Example Lesson:
CCA Lesson 5.1.1 Problem 5-1



Supporting Reading in Math

Telling the Story of the Problem



Supporting Reading In Math

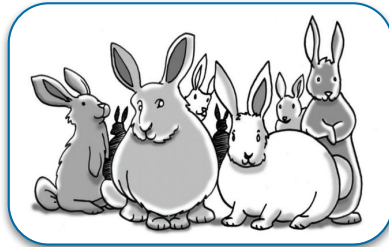
Graphic Organizer



Graphic Organizers

- + Visual representations help students make sense of problems.
 - + “Ideas take shape through words, texts, illustrations, conversations, debates, examples, etc.”

Example Lesson:
CCA Lesson 5.1.1 Problem 5-1



Important Information	Picture
Question:	Answer:
Multiple Representations (Ex: Equations)	Multiple Representations (Ex: Graph)

Supporting Reading In Math

What have we learned so far?



Tell the Story of the Problem

- + In daily lessons, a teacher tells the problem like a story and **jots the key information** on the board.

Graphic Organizers

- + Visual representations help students make sense of problems.
- + Our goal is **amplifying, rather than simplifying**, speech or text.

Supporting Reading In Math

Three Reads Protocol



Three Reads Protocol

- + Math problems need to be read multiple times.
- + Our purpose changes each time we read.

Example problem:

CC3 5.2.1 Problem 5-23

Three Reads

Mathematical Language Routine 6



Directions:

1. Prepare to read the problem three times, each time thinking about something different.
2. On the first read, ask yourself, *What is this about? Who is involved? What is the situation?*
3. On the second read, ask yourself, *What math is being done or needs to be done here? What mathematical vocabulary do I need to know?*
4. On the third read, ask yourself, *What strategies can I use to solve this? How might I begin solving this? What do I think the answer is? Does my answer make sense?*



Supporting Reading In Math

“We have to..”



The “We have to...” Statement

- + Establishes a culture of focused reading and problem solving.
- + Teams jot down what they are figuring out in the problem before they continue solving it.

Example problem:
CC3 5.2.1 Problem 5-23



Agenda

Reading Strategies in the Math Classroom



- Opening
- Icebreaker
- Why do we read in math?
- How do we read in math?
- Closure

Closure

Session Outcomes



Together we:

Considered the
thinking
processes
involved in
reading a math
problem

Experienced
structures and
routines that
support reading
in mathematics

Reflected on
supporting
sensemaking in
problem-based
learning

Closure – Whiparound

Reflecting on our Learning



How can we support
sensemaking in
problem-based learning?



Closure



- + **Parking Lot**

- + **Attendance & Feedback**

Either scan the QR code

OR

Enter passcode in the portal

XXXXXX



- + **Next Steps:**

- Establish reading strategy routines in your classroom.
- Enroll and complete Instructional Module 4 – Supporting Productive Struggle