



Foundations for Implementation - Session 9

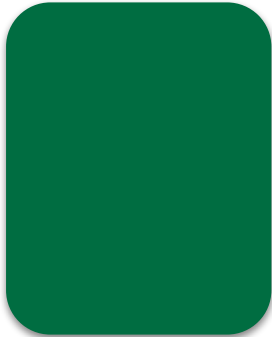
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Welcome!

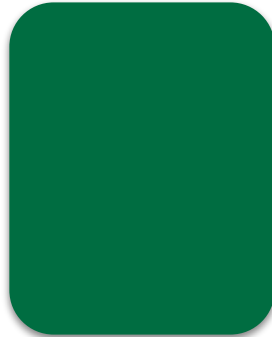
CPM Virtual Learning Series



Session Facilitators

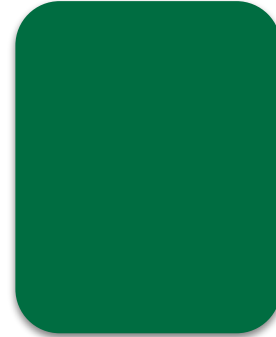


Name



Name

Support



**Regional
Professional
Learning
Coordinator**

Tech Tip



Viewing



Welcome!
CPM Virtual Learning Series

Foundations for Implementation - Session 1

What should I do before we get started?

- + Feel free to test your mic, then mute.
- + In the Public Chat, share your location, school name, and the CPM course(s) that you teach.
- + Review the Virtual Classroom Norms.

NORMS

- Offer support to others.
- Private Chat Facilitator with questions.
- Manage your audio.

Slide 1 | 100%



Opening

Foundations for Implementation Series



Virtual Learning Events	
Summer	Introduction to Foundations Asynchronous Module
	Sessions 1-6 Synchronous Virtual Learning
	Instructional Modules (IM) Asynchronous IM 1 - 3
	Content Modules (CM) Asynchronous CM 1- 2
School Year	Sessions 7 - 10 Synchronous Virtual Learning
	Instructional Modules (IM) Asynchronous IM 4 - 5
	Content Modules (CM) Any 4 additional Asynchronous CMs

Opening

Outcomes



Participants will:

Reflect on student actions that support the implementation of CPM's Research Pillars.

Reflect on and strengthen formative assessment practices.

Collaborate with and learn from other teachers.

Opening

Agenda



Focus: Questioning and Formative Assessment

- Icebreaker
- Formative Assessment
- Classroom Connection
- Closure

Research Connections

CPM 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.



Student's 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



- + Actively engage in all activities and discussions.
- + Manage your technology appropriately.
- + Critically analyze ideas...but not people.
- + Explore your beliefs about teaching and learning.
- + Focus on solutions and actions.
- + Be visionary.

Click on your name and set your status to thumbs up if you are ready to begin.



Agenda

Session Nine

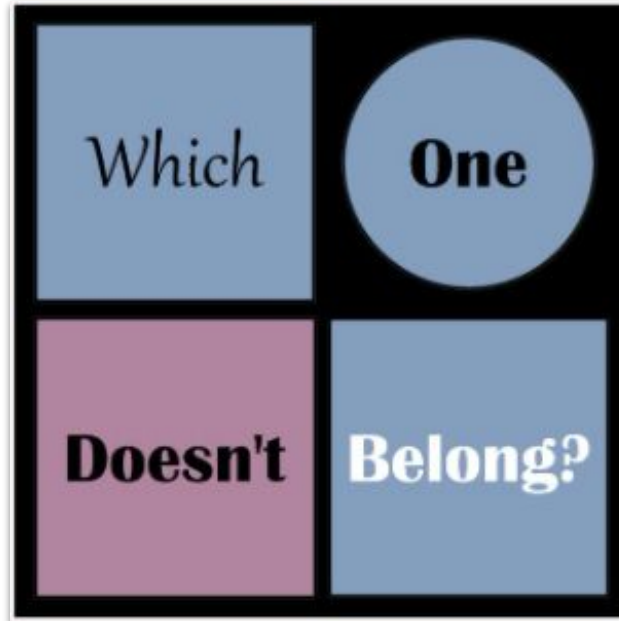


Focus: Questioning and Formative Assessment

- Icebreaker
- Formative Assessment
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- Closure

Icebreaker

Which One Doesn't Belong



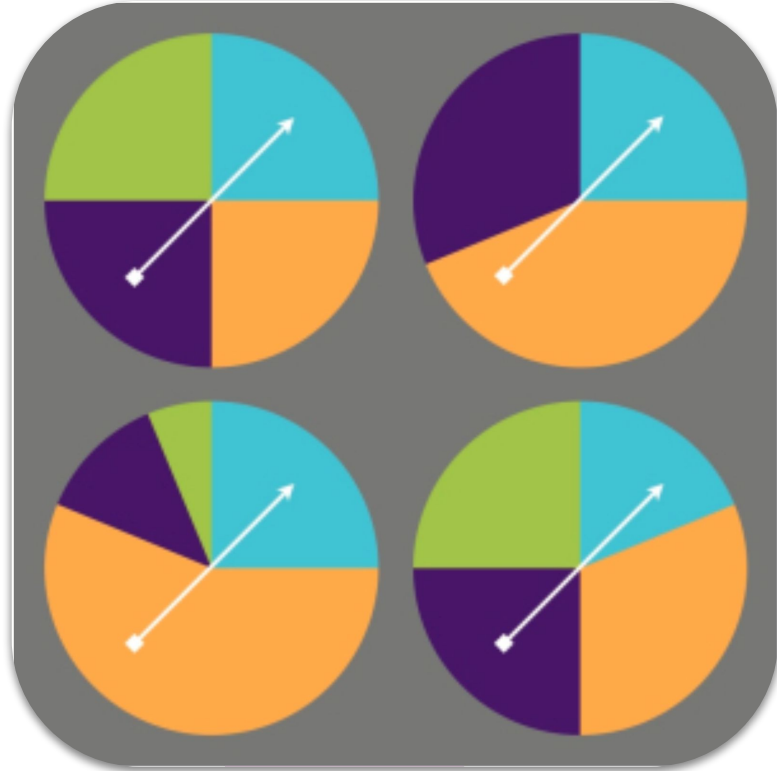
Icebreaker

Debrief



R/R

Share one that doesn't belong and explain why?



Icebreaker

Implementation Progress Tool



CPM EDUCATIONAL PROGRAM Implementation Progress Tool

SUGGESTIONS FOR USING THIS TOOL

1. First, re-read and discuss the three pillars to ensure complete understanding of them. (You may want to reference the CPM executive summary for more specifics on each.)
2. Next, consider the description of desired student behavior on below. Ask yourself to what extent each pillar is present in your classroom.
3. Next, use the descriptions of desired student behavior in section two to analyze what is currently happening in your classroom. What do you see students doing and accomplishing that shows evidence of each pillar?
4. Finally, use section three to hone in on your strongest strategies and assess both your strengths and growth. At what practices do you need to focus? (What practices do you need to find most challenging? Where would you like to start building your skills? For what are you the most support?)

This form is designed to be used by CPM teachers in their first or second year of implementation, either as a tool used first or second year of implementation with other teachers (perhaps in a PLC setting), or in conversation with a coach to track implementation progress, identify and celebrate accomplishments, define priorities for goal setting, and suggest opportunities for future growth. Please note that not all of these elements of teaching and learning would be observed in a single lesson.

The form is structured around the three research pillars upon which the CPM program is built and is designed in three sections.

SECTION ONE describes a critical component that anchors each pillar in any classroom. This area is critical for successful implementation and may require shifts in teacher belief systems.

SECTION TWO describes what you might observe in regards to student learning in a classroom where each pillar is intact.

SECTION THREE lists instructional strategies and practices that teachers use to support each pillar.

The three pillars represent researched best education around which the CPM program is built.

Collaborative Learning
Research says students learn ideas more deeply when they discuss ideas with classmates.

Problem-Based Learning
Research says students learn ideas more usefully for other areas when they learn by attacking problems.

SECTION ONE: The pillars that represent best education around which the CPM program is built.

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 authority as they work together in productive struggle. Teachers guide without taking over the thinking.



SECTION TWO: Features of desired student learning when the pillars are in place.

Collaborative Learning
Students read and make sense of problems together.

Problem-Based Learning
Student thinking at varied depths of conceptual understanding are openly shared and valued.

Mixed, Spaced Practice
Students work through lessons at an appropriate pace.

Students are able to listen to the ideas of others and communicate their own ideas both in teams and during whole class discussions.

Students demonstrate and value both conceptual and procedural knowledge.

Students understand that mastery takes time, effort, and support.

Students listen carefully to the thinking of others and respond with clarifying questions or extensions of their own.

Students look for, compare, and connect multiple models and solution strategies.

Students are aware of learning targets and periodically self-assess their progress towards those targets.

Students engage in productive mathematical discourse, justifying answers, creating viable arguments, and critiquing the reasoning of others.

Students recognize that incorrect learning can be a stepping stone to learning and are willing to share and investigate their thinking.

Students solidify learning as they work on Review & Preview problem sets daily as intended.

SECTION THREE: Instructional strategies evident when the pillars are in place.

Collaborative Learning
Teachers create an environment of collaboration and consistently progress towards effective collaboration.

Problem-Based Learning
Teachers use the lesson launch to connect to prior learning and clearly communicate the learning target.

Mixed, Spaced Practice
Teachers plan and pace lessons as intended, based on a thorough progression of the learning of each chapter and the course as a whole.

Teachers use a variety of classroom modes (whole group, study team, partner, individual) at appropriate times within each lesson.

Teachers circulate purposefully to interact with all teams, monitoring and questioning the thinking of students.

Teachers anticipate common misconceptions and consider differentiated levels of understanding towards stated learning targets.

Teachers use Study Team and Teaching Strategies (SITS) and Team Roles with purpose.

Teachers use questioning to uncover student thinking, and then provide opportunities for that thinking to be shared.

Teachers provide timely feedback on student practice of previously introduced skills and an beginning understandings of developing concepts.

Teachers hold students individually accountable within the team.

Teachers formatively assess student needs and take appropriate action to support accessibility.

Teachers elicit students' informal ideas and leverage them towards developing formal mathematical connections and procedures at appropriate times in the course.

Teachers are aware of and take status issues into consideration when managing teamwork.

Teachers design and facilitate opportunities for students to make connections between various solutions and key mathematical ideas.

Teachers use varied assessments that are based on mastery over time and assess both conceptual and procedural knowledge.



use the link in the Public Chat

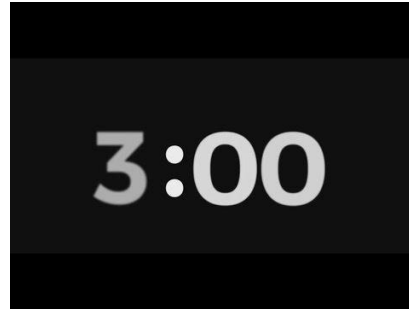


Icebreaker

Implementation Progress



Think-Ink-Share



Think

- + Think about the student actions that are evident in your classroom.
- + In which area(s) would you like to see your students **grow**?

Ink - Share

- + Type your response next to your name in the shared notes.

Agenda

Session Nine



Focus: Questioning and Formative Assessment

- Icebreaker
- Formative Assessment
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- Closure

Formative Assessment



What is one word or phrase that comes to mind when you think of Formative Assessment?

Post your answer in the public chat.



Formative Assessment



CPM EDUCATIONAL PROGRAM / an educational 501(c)(3) nonprofit
Empowering mathematics students and teachers through exemplary curriculum, professional development, and leadership

Understanding and Rethinking Formative Assessment by Karen Wootton

I have an issue with pretests. Plenty of articles exist proclaiming the necessity, the usefulness, and the power of pretests, but I am just not buying it, and for several reasons. First, I remember my days in elementary school when all my teachers had decided they needed to give pretests. I hated taking a test where I really did not know the material, but what I found worse was when I “kind of” knew the material. I had an inkling of what the answer is, or maybe two choices (since they were often multiple choice) seemed reasonable, so I would guess. Invariably, I managed to do “okay” on these pretests, and my teachers had a false idea of what I knew. Pretest days became bad days for me.

Later, during my student teacher days, one of my master teachers used pretests regularly. One day, he started the class with a pretest on the upcoming probability unit. The students took the test, and since his room adjoined an office, he quickly ran the pretests through the scantron machine. The class had all done surprisingly well, so much so that he felt he could not do the lesson he had planned for the remainder of the class. He would be “wasting everyone’s time” he said. So he let the class sit and chat quietly. We could certainly debate the issue of what is actually “wasting time” in this situation, and certainly if the teacher had given the pretest at the end of the previous class, he would not have had this issue. But again, I was having that bad pretest feeling.

Yet, many times we hear formative assessment coupled with pretests. The idea that a teacher can give a pretest and then adjust a lesson based on the results is an appealing thought. One of my concerns is that the pretest’s effectiveness is only as good as the amount of effort the teacher puts into writing the pretest, scoring the pretest, and analyzing the data gathered. Using a generic multiple-choice pretest may not give the teacher accurate information on how much a student understands. Hence, we need to broaden our notion of what formative assessment is, and consider more useful tools than pretests.

Some prefer the term Assessment For Learning rather than formative assessment, and often these terms are used interchangeably. I recognize a difference with Assessment For Learning, or AFL, focusing on the student. AFL provides feedback not only to the teacher about the student’s progress and understanding, but also gives the student the information as well. So consider my not-so-favorite item, pretests. Does the teacher get information on what the students know? Yes. Well, maybe. Does the student gain information? Not right away. And, if the pretest is in a scantron format, receiving the score sheet the next day gives little help to the student in understanding what s/he knows. We need another method for providing feedback to all interested parties, students and teachers.

Understanding and Rethinking Formative Assessment By Karen Wootton Director of Curriculum and Assessment



use the link in the Public Chat



Formative Assessment

Four A's Reading Protocol



7:00

Read the article.

Answer one or more of the following questions.

- + What **assumptions** does the author of the text hold about formative assessment?
- + What do you **agree** with in the text in regard to formative assessment?
- + What do you want to **argue** in the text about formative assessment?
- + What parts of the text do you want to **aspire** to in your formative assessment practices?

Formative Assessment

Study Team and Teaching Strategy



Stand ~~Walk~~ and Talk

- + Partners receive topic or concept to discuss.
- + Partners summarize, clarify ideas, or ask questions while walking.
- + Partners share any remaining questions with the teacher after returning to their desks.

Agenda

Session Nine



Focus: Questioning and Formative Assessment

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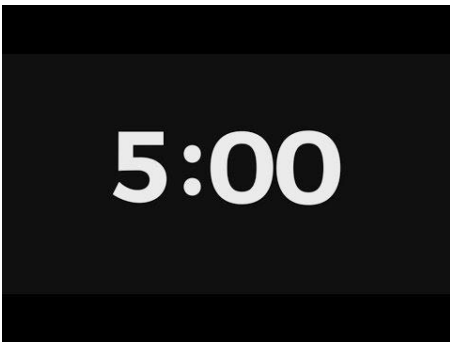
Classroom Connection

Two Storage Tanks

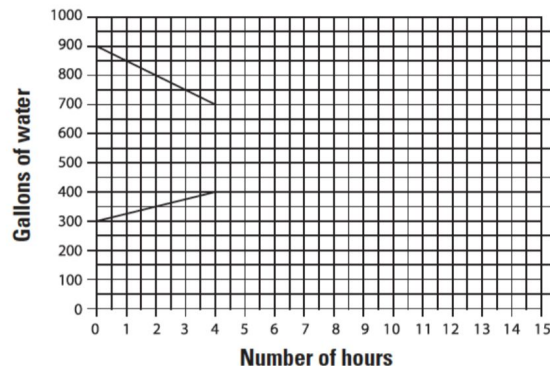


Open the math problem.

Set your status to an applaud when you are ready to preview the problem.



Two large storage tanks, T and W, contain water. T starts losing water at the same time additional water starts flowing into W. The graph below shows the amount of water in each tank over a period of time. Assume that the rates of water loss and water gain continue as shown.



Closure

Teacher Tips that Support Formative Assessment



Teacher Actions That Support Implementation

Pocket Questions



Prepare pocket questions and create additional purposeful questions to uncover student thinking.

Actionable Feedback



Utilize STTS and circulation to support and provide students with meaningful feedback.

Just in Time Support



Anticipate student responses to support movement towards the learning target.

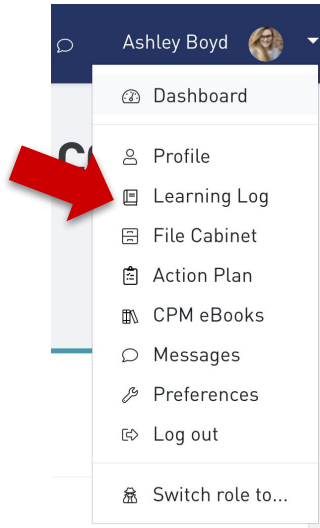
Learning Log

Steps to Access

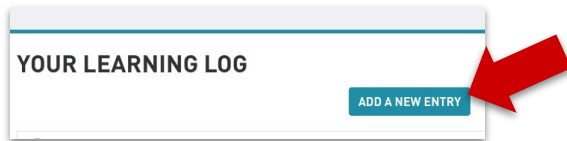
4:00



1.



2.



3.

LEARNING LOGS: ADD A NEW ENTRY

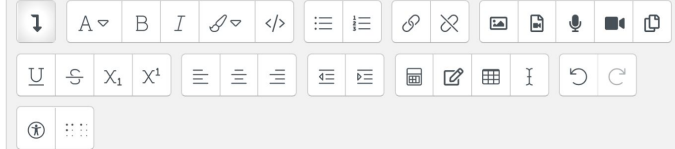
▼ Collapse all

▼ General

Entry title ⓘ

Purposeful Formative Assessment

Learning Log entry body ⓘ



-Purposeful questioning is essential because...

-I plan to refine my formative assessment practices by...

Agenda

Session Nine



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Closure

Formative Assessment



Fortune Cookie

- + Teams receive sentence starters (fortunes) in an envelope.
- + Team Member (1) reads one sentence starter and shares a brief explanation.
 - + All team members contribute & shares a brief explanation.
- + When complete, Team Member (2) reads a new sentence starter and shares.
 - + All team members contribute & shares a brief explanation.
- + Continue the rotation through all sentence starters (fortunes).

Fortune Cookie

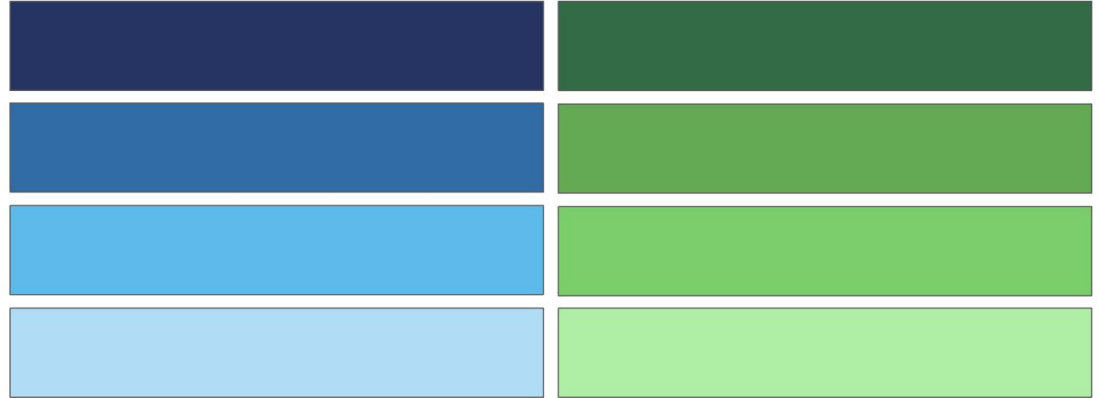
Formative Assessment



Delete a rectangle to reveal a prompt or question.

Open the google slide deck from the link in the public chat.

Set your status to a thumbs up.



Closure

Formative Assessment



Give One, Get One

Give One

- + In the Public Chat **GIVE** your, "I used to think ____ about formative assessment. Now I think _____ about formative assessment."

Get One

- + Read through the public chat to **GET** an idea.

Set your status to applaud when you are done.



Closure

Study Team and Teaching Strategies



Ambassador	Fishbowl	Hot Seat	Notice and Wonder	Proximity Partner	Think-Pair-Share
Board Report	Fortune Cookie	Huddle	Numbered Heads	Reciprocal Teach	Traveling Salesperson
Carousel: Around the world	Gallery Walk	I have... Who has...	Pairs Check	Red Light, Green Light	Tuning Protocol
Carousel: Index Card	Give One- Get One	I Spy	Participation Quiz	Silent Debate	Turn and Talk
Carousel: Station Rotation	Glow and Grow	Jigsaw	Peer Edit	Swapmeet	Two Stars and A Wish
Dyad	GPS	Listening Post	Pick Three	Teammates Consult	Walk and Talk
Elevator Talk	Hot Potato	Math Chat	Players-Coach	Think-Ink-Pair-Share (T.I.P.S)	Whiparound

Closure

Outcomes



Participants will:

Reflect on student actions that support the implementation of CPM's Research Pillars.

Reflect on and strengthen formative assessment practice.

Collaborate with and learn from other teachers.

Closure

Outcomes



ABOUT CPM

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



Candidate for Accreditation

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- Slack for CPM Teachers
- More Math for More People Podcast

LINKS

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

NEED HELP?

- (209) 745-2055
- support@cpm.org
- Regional Contacts
- Report a problem

Closure



+ Parking Lot

+ Attendance & Feedback

Either scan the QR code

OR

Enter passcode in the portal

XXXXXX

+ Homework:

- Register for follow up Session 10 (Last One!!)
- Continue working on Instructional Module 5 - Assessment Practices
- Continue working through at least four more Content Modules (Chapters 3+)



Text Font: Roboto

Title Font Size: 24

Subtitle Font Size: 18

Color coding:

Teacher Lens: 006DAB

Learning Log: 006DAB

Student Lens: 41AD49

Housekeeping: 233368

Content Module: 006D41

Thread: 006D41

Text should be primarily black or dark blue (#233368)

Note: Drop zones of icons on layouts are not moveable.

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



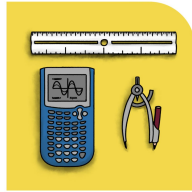
TASK CARD



TEAM ROLES ALL



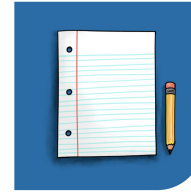
RESOURCE MANAGER



TASK MANAGER



REPORTER RECORDER



FACILITATOR



IMPLEMENTATION ACTION PLAN



TEAM ROOMS



IMPLEMENTATION PROGRESS TOOL



STTS

