



# Building on Assessment (Virtual) – Session 5

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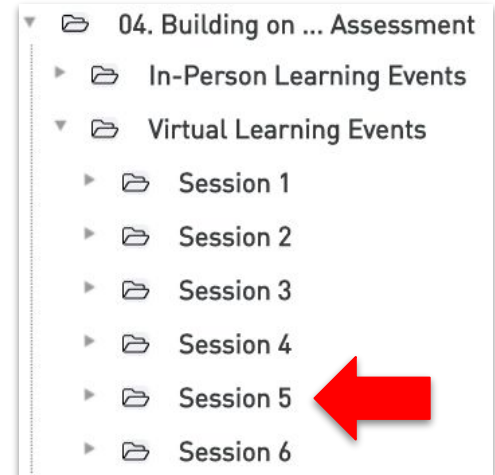
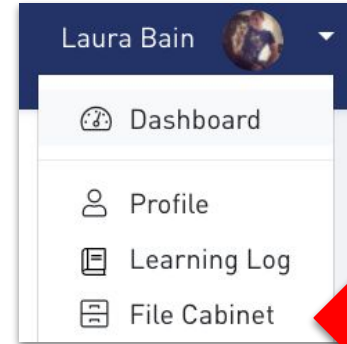
# Welcome!

CPM Virtual Learning Series

## Building on Assessment – Session 5

*What should I do before we get started?*

- + Public Chat: Share if you have pets.  
What are their names?
- + Open the resources from the File Cabinet.
  - + 00 Productive, Unproductive Beliefs Poster
  - + 01 Developing Assessment Capable Learners
  - + 01 Five\_Key Strategies
  - + 02 Hinge Questions



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# Opening

## Outcomes



### Participants will:

- + Gain knowledge of formative assessment research and strategies.
- + Plan a formative assessment that supports the summative assessment item.
- + Develop success criteria for their formative assessment.

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# Opening

## Agenda



## Formative Assessments



- + Opening
- + Strategies for Effective Formative Assessment
- + The Formative Five
- + Closure

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# Opening



Be willing to take **risks**.  
Have a **visionary** mindset.  
Stay **engaged**.  
Explore and reflect on your **beliefs**.  
Give **grace** to others and yourself.

Set your status to thumbs up if you are ready  
to begin.





## Icebreaker



**Think about:** In what ways does formative assessment happen in your classroom?



**Be prepared** to share one way.

# Tech Tip



## Task Card

### Team Task: 5 Minutes

1. Review Team Rooms Agreement. (1 min)
2. Take turns introducing yourselves. (3 min)
  - Name
  - Location
  - Grade(s) you have taught
  - Highlight from your week
3. Write down your team room number.

EXAMPLE

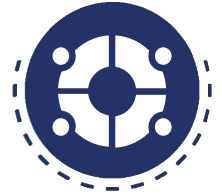
The screenshot shows a web browser with two tabs: 'BigBlueButton - IC EE - Default' and '1 - IC EE'. The URL is 'demo6.bigbluebutton.org/html5client/join?sessionToken=ozvnatdgprn6aca8'. The interface is split into 'Main Room' and 'Breakout Room'. A red box highlights a timer in the Breakout Room that says 'Breakout room time remaining: 14:33'. A red arrow points to this timer. The interface also shows a 'MESSAGES' sidebar with 'Public Chat', 'NOTES' with 'Shared Notes', and 'USERS (2)' listing 'LB (You)' and 'Danielle'.

## Time

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# Opening – Icebreaker

## Team Room Task Card



### Team Task: 6 Minutes

1. Determine team roles and introduce yourselves. (2 min)
2. In what ways does formative assessment happen in your classroom? (4 min)

Resource Manager

Facilitator

Task Manager

Recorder/Reporter



# Opening

## Beliefs about Mathematics Assessment



PRODUCTIVE BELIEF		
N C T M	1	The primary purpose of assessment is to inform and improve the teaching and learning of mathematics.
	2	Assessment is an ongoing process that is embedded in instruction to support student learning and make adjustments to instruction.
	3	Mathematical understanding and processes can be measured through the use of a variety of assessment strategies and tasks.
	4	Multiple data sources are needed to provide an accurate picture of teacher and student performance.
	5	Assessment is a process that should help students become better judges of their own work, assist them in recognizing high-quality work when they produce it, and support them in using evidence to advance their own learning.
	6	Ongoing review and distributed practice within effective instruction are productive test preparation strategies.

C P M	7	Authentic assessment means assessing in a manner that mirrors the way the students have learned, and focusing on what the students know, rather than what the students do not know.
	8	Assessment, as with the learning, should focus on the big ideas and the connections to assess for understanding, and not on the fine grain-sized skills.
	9	Assessment and teaching should be seamlessly interwoven, and time should be spent on both. Because of the lack of time most teachers have, it is important to assess wisely, and use the supports that are in place.
	10	Assessment is the process of understanding student learning, and grading is evaluating that understanding. The bulk of the teacher's time should be spent on assessing rather than grading.

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# Opening

## Effective Math Teaching Practices



Facilitate meaningful mathematical discourse.

Pose purposeful questions.

Elicit and use evidence of student thinking.

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# Formative Assessment

## Five Key Strategies

### Your Task:

1. Review
  - a. the introduction
  - b. your assigned section
  - c. the conclusion
2. Highlight important ideas.

**Teams 1 & 6:**  
Section 1

**Team 2:**  
Section 2

**Teams 3 & 7:**  
Section 3

**Team 4:**  
Section 4

**Teams 5 & 8:**  
Section 5

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# Five Key Strategies

## Team Room Task Card



### **Team Task: 10 Minutes**

1. Read your team role. (1 min)
2. Create a presentation that summarizes the section and makes connections. (9 min)

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# Formative Assessment

## Five Key Strategies



1. Clarifying, sharing, and understanding goals for learning and criteria for success with learners.
2. Engineering effective classroom discussions, questions, activities, and tasks that elicit evidence of students' learning.
3. Providing feedback that moves learning forward.
4. Activating students as owners of their own learning.
5. Activating students as learning resources for one another.

*So, how do we make all of this happen?*

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# Formative Assessment

## Learning Log



## Title: Strategies for Effective Formative Assessment



\_\_\_\_\_ is a strength, because \_\_\_\_.

\_\_\_\_\_ is an area for growth, because \_\_\_\_\_.



### Consider:

- + How is the strategy an equitable assessment practice?
- + What effect will this strategy have on your assessment culture?
- + How will this strategy develop assessment capable learners?

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# Screen Break

Take a break and walk away from the computer.



Share your experience using

**#MoreMath**  
**#MOREMATH**  
**#moremath**

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# Formative Assessment

## The Formative Five

- + Observations
- + Interviews
- + Show Me
- + Hinge Questions
- + Exit Tasks





# Formative Assessment

## Numbered Heads



How might \_\_\_\_\_ appear in a CPM classroom?



**Observations**



**Interviews**



**Show Me**



**Exit Tasks**

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# Formative Assessment

## Hinge Point Questions



The hinge question (William, 2011) provides a check for understanding/proficiency at a “hinge point” in a lesson. The hinge question is a planned question used to elicit responses that guide your next steps in planning and instruction, specifically for the next day's lesson. Responses to hinge questions directly inform both planning and instruction.

**From** *The Formative 5: Everyday Assessment Techniques for Every Math Classroom*, Francis (Skip) Fennell, Beth McCord-Kobett, and Jonathan A. Wray (Corwin, 2017). Used with authors' permission.

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# Formative Assessment

## Hinge Questions



### Student-Directed

- + Learning Trajectory
- + Review & Preview
- + Peer & Self Assessment
- + Review of previously learned concepts

### Teacher-Directed

- + CPM Lessons
- + Core Problems
- + Hinge Questions
- + Assesses understanding of new material

# Formative Assessment

## Identifying Hinge Questions



### 1. Lesson Questions from the student book

4-31. UNDERSTANDING  $y = mx + b$

Rules for linear patterns can all be written in the form  $y = mx + b$

In  $y = mx + b$ ,  $x$  and  $y$  represent variables, while  $m$  and  $b$  represent are numbers that stay the same in the equation after they are chosen. with your team:

### 2. Discussion Questions from the student book

How can you see growth in the rule?

How do you know your rule is correct?

What does the representation tell you?

What are the connections between the representations?

### 3. Pocket Questions from the teacher notes

#### Lesson 4.1.6

- How can you use growth?
- How can we use our knowledge of  $y = mx + b$  to make graphs quickly?
- What connections do we still need?

# Formative Assessment

## CPM Pocket Questions



Chapter /

Chapter 8

Chapter 9

Chapter 10

Reference

**Teacher**

Program Description

Course Preparation

Standards Practices

**Teacher Support**

Closure

Assessment

Team Support

Strategies

Universal Access

### CC Course 3

Search

eTools   Newsletter   Mathcasts   Parent Guide   PIP Notes   **Printable Resources**   Prof. Development

Selected Answers   SMART Board   Stat Supplement   Textbook Errata

#### Course Specific Materials

- [CC3 Checkpoint Materials \(ESP\)](#)
- [CC3 Learning Log Toolkit pages \(ESP\)](#)
- [All CC3 Resource Pages \(Large\)](#)
- [CC3 Pocket Question Cards](#)**
- [CC3 Pocket Question Cards](#)
- [CC3 PI-8: Puzzle Investigator \(ESP\)](#)

#### Generic Resource Pages

##### Closure Activities

- [Concept Catcher \(ESP\)](#)
- [Eight Page Booklet \(ESP\)](#)
- [Magic Book \(ESP\)](#)
- [Problem Solving GO \(ESP\)](#)
- [Transition GO \(ESP\)](#)

##### Manipulatives

- [Algebra Tiles](#)
- [Expression and Equation Mats](#)
- [Integer Tiles](#)

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# Formative Assessment

## Identifying a Hinge Question



**Select a lesson:** CCG Lesson 4.1.4

**Read the lesson objective and review the lesson.**

Students will practice re-orienting a triangle and will learn new ways to identify which leg is  $\Delta x$  and which is  $\Delta y$ .

**Decide whether one (or more) of the embedded questions can be used as a Hinge Question.**

4-35b) Mae Lin says, “I see it differently. I can tell  $\Delta y = 4$  without turning the triangle.” How can she tell? Explain one way she could know.

4-35c) Eddie replies, “What if we use  $72^\circ$  as our slope angle? Then  $\Delta x = 4$ .” What is he talking about? Discuss with your team and explain using pictures and words.

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# Formative Assessment

## Identifying a Hinge Question



**Select a lesson:** CC2 Lesson 4.2.3

**Read the lesson objective and review the lesson.**

Students will calculate unit rates and use them to solve word problems involving proportional relationships.

**Decide whether one (or more) of the embedded questions can be used as a Hinge Question.**

After teams finish 4-47, ask, “In what ways is the unit rate helpful when writing an equation of the given situation?”

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# Identifying Hinge Questions

## Team Room Task Card



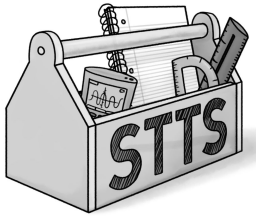
### Team Task: 15 Minutes

1. Read your team role in the Public Chat. (1 min)
2. Select a lesson. Identify the hinge point and hinge question. (14 min)





## Partner Chat



### Proximity Partner

- + Find your Partner in the Shared Notes.
- + Start a Private Chat.

### Partner Chat

- + How can using Hinge Questions impact student learning?
- + How will I make this a part of my teaching?

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# Formative Assessment

## Implementing a Hinge Question



What strategy will you use  
when implementing these  
Hinge Questions?

*Example: Ask the Hinge Question during circulation.*

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# Closure

## Session 5 Outcomes



### Participants will:

- + Gain knowledge of formative assessment research and strategies.
  - + (Five Key Strategies for Effective Formative Assessment, The Formative Five)
- + Plan formative assessments that supports the summative assessment item.
  - + (Hinge Questions)
- + Develop success criteria for their formative assessment.
  - + (Hinge Questions)

# Closure

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# Closure

## Effective Math Teaching Practices



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# Closure



- + Parking Lot
- + Attendance
  - **In the Portal**
- + Continuing Education Credit
- + **Homework:** On-Demand Module
  - Activity 1: Prior to Session 1
  - Activity 2: Prior to Session 3
  - Activity 3: Prior to Session 5

