



Building on Assessment (Virtual) – Session 1

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Rev 5/15/23 (ce)

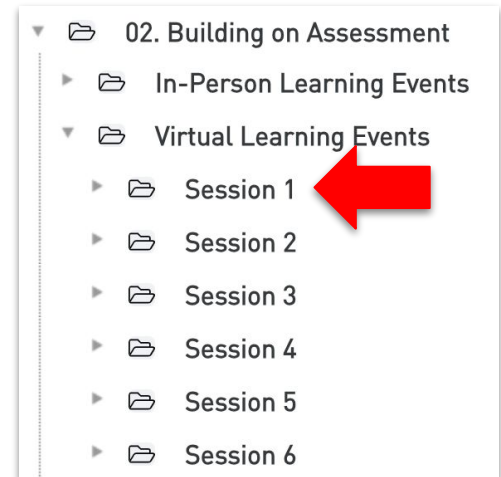
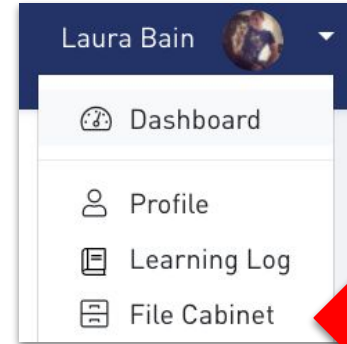
Welcome!

CPM Virtual Learning Series

Building on Assessment – 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 and the CPM course(s) that you teach.
- + Open the resources from the File Cabinet.
 - + 00 Productive, Unproductive Beliefs Poster
 - + 01 Developing Assessment Capable Learners



Tech Tip



Viewing Options

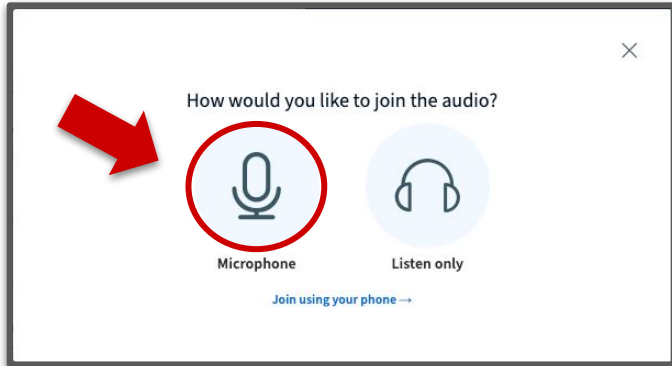
User list toggle

The screenshot shows a Zoom meeting interface with a dark blue background. At the top center, a white rounded rectangle contains the text "Viewing Options". In the top left corner, a user name "Ashley Boyd" is visible, with a red arrow pointing to it from a grey box labeled "User list toggle". In the top right corner, a red circle highlights the three-dot menu icon. A white menu is open, listing options: "Fullscreen Application", "Settings", "About", "Help", "Keyboard shortcuts", "Manage layout" (highlighted in blue), and "Leave meeting". A red arrow points from the "Manage layout" option to a "Layouts" dialog box. The dialog box shows four layout options: "Custom", "Smart layout", "Focus on presentation", and "Focus on video". At the bottom of the dialog are "Cancel" and "Confirm" buttons. The bottom of the screen shows a Zoom control bar with icons for mute, video, chat, and other functions.

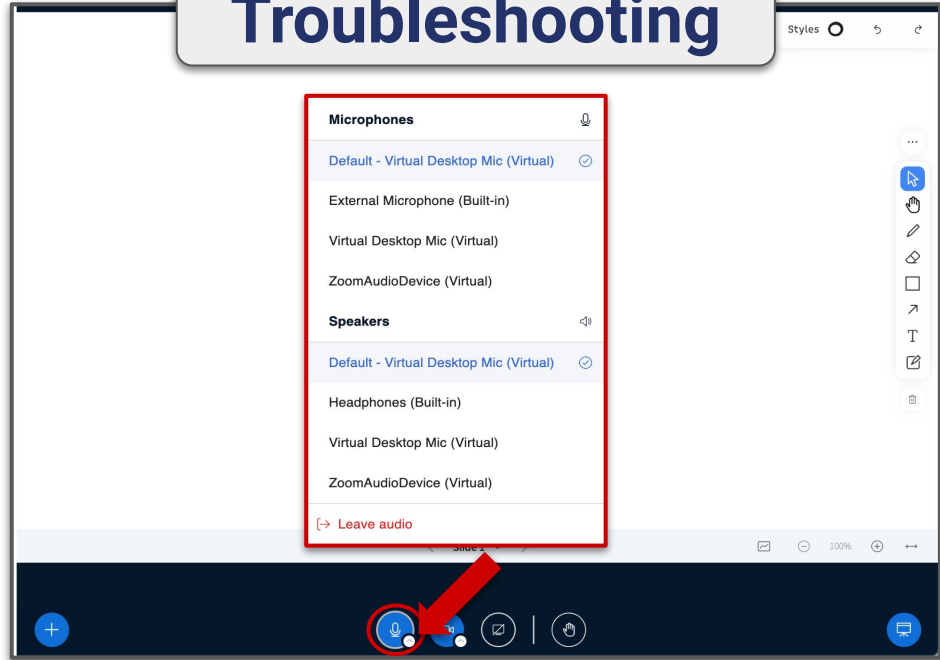
Tech Tip



Audio



Troubleshooting



Opening

Outcomes



Participants will:

- + Reflect on the efficacy of their current summative assessment practice.
- + Examine the chapter progression.
- + Examine and reflect on equitable assessment practices.

Opening

Agenda



Assessment for Learning Over Time



- + Opening
- + Learning Trajectory
- + Building Equity into Your Assessment Culture
- + Closure

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.



Opening Icebreaker



Opening Icebreaker

Team 1



Resource Manager:
First name - first alphabetically



Task Manager:
First name - second alphabetically



Recorder Reporter:
First name - third alphabetically



Facilitator:
First name - fourth alphabetically



Assessment Beliefs

Highlight the productive belief.

The primary purpose of assessment is to inform and improve the teaching and learning of mathematics.

The primary purpose of assessment is accountability for students through report card marks or grades.

[Click here](#) to see a full list of the Productive & Unproductive Assessment Beliefs.

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.

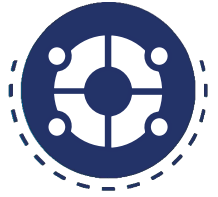
EXAMPLE

The screenshot shows a web browser with two tabs: 'BigBlueButton - IC EE - Default' and '1 - IC EE'. The address bar shows the URL 'demo6.bigbluebutton.org/html5client/join?sessionToken=ozvnatdgpr6aca8'. The interface is split into two sections: 'Main Room' and 'Breakout Room'. A red box highlights a timer in the top right corner of the Breakout Room section that reads 'Breakout room time remaining: 14:33'. A red arrow points to this timer. The interface also shows a 'MESSAGES' section with 'Public Chat', a 'NOTES' section with 'Shared Notes', and a 'USERS (2)' section with 'LB (You)' and 'Danielle'.

Time

Opening – Icebreaker

Team Room Task Card



Team Task: 5 Minutes

1. Review Team Room Routines. (1 min)
2. **Find your team room slide.** Introduce yourselves and determine team roles. (2 min)
3. Decide which belief is productive. (1 min)
4. Review the Assessment Beliefs on the last slide. (1 min)

TEAM ROOM ROUTINES

- Webcams Encouraged.
- Active Engagement.
- Be a risk taker.

Opening

Beliefs about Mathematics Assessment

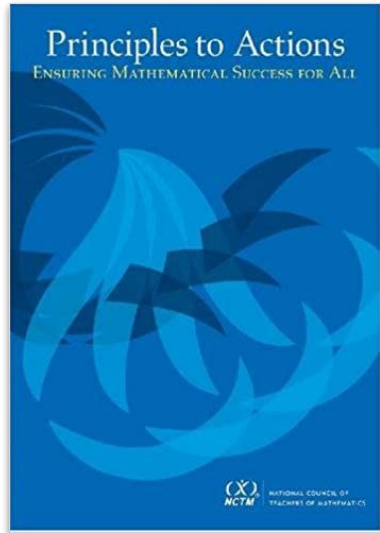


PRODUCTIVE BELIEF		
N C T M	1	The primary purpose of assessment is to inform and improve the teaching and learning of mathematics.
	2	Assessment is an ongoing process that is embedded in instruction to support student learning and make adjustments to instruction.
	3	Mathematical understanding and processes 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.

Opening

Effective Math Teaching Practices



Establish goals to focus learning.

Implement tasks that promote reasoning and problem solving.

Pose purposeful questions.

Support productive struggle in learning mathematics.

Elicit and use evidence of student thinking.

Opening

Assessment ≠ Grading





Developing an assessment system
to complement CPM's Principle of
Mixed, Spaced Practice.

Learning Trajectory

eBook Access



1st → my.cpm.org

Welcome to CPM!
Mathematics Learning Platform

Learning	Professional Learning
Inspiring Connections	Professional Learning Portal
eBooks	Event Registration
eWorkspace	Podcast
Assessment	
Parent Support	

Account Management	Support
eBook Licensing System	Knowledge Base
Shop	Teacher Tutorials
Use Enrollment Pin	Student Tutorials

3rd →

CPM
Enter Enrollment PIN

[Enroll](#)
[Cancel](#)

Steps to enroll in eBook:

1. Go to my.cpm.org
2. Click “Use Enrollment Pin” under Account Management.
3. Enter the enrollment pin (**In the Public Chat**).
4. Go to ebooks.cpm.org and verify you have access.

Learning Trajectory

The Challenge



Developing an assessment system to complement CPM's Principle of **Mixed, Spaced Practice**.

Creating appropriate assessments that model the **mastery over time** component of CPM.

What topics can we expect most students to master by the end of this chapter?

What topics are in development and not yet ready to be assessed at a mastery level?



Using CPM materials, we will:

Identify formative or summative learning targets.

Learn a process for tracking learning targets throughout a chapter/course.

Identify multiple forms and levels of assessment to encourage mastery over time.

Learning Trajectory

Three Assumptions



Assessments must align with what students are practicing.

CPM materials will be the resource.

- + Review & Preview
- + Chapter Closure problems

The goal is to identify formative/summative learning targets.

- + summative: material from prior chapters
- + formative: material from current chapter

Learning Trajectory

CC3 – Chapter 4



In this chapter, you will learn:

- + How to change any representation of data (such as a pattern, table, graph, or rule) to any of the other representations.
- + How to use the connections between patterns, tables, graphs, and rules to solve problems.
- + Mastery of Checkpoint 4: Area and perimeter of circles and composite figures.

Tech Tip



Share Screen

4th → **Choose what to share**

2nd → **Take presenter**

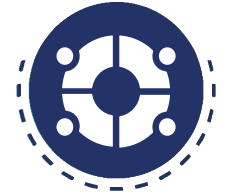
1st → **+**

3rd → **Share your screen**

The screenshot shows the Zoom mobile app interface. At the bottom, there is a toolbar with several icons: a plus sign (+), a microphone, a phone handset, a video camera, and a screen with a cursor. The screen sharing icon is circled in red. Above the toolbar, a callout box says "Share your screen". In the background, a "Choose what to share" dialog is open, showing a list of applications and a preview of the selected application. A red box highlights this dialog, and a red arrow points to it from the "4th" callout. The dialog has "Cancel" and "Share" buttons at the bottom.

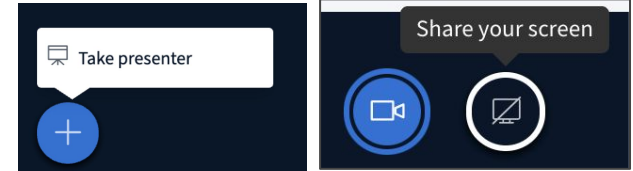
Learning Trajectory

Team Room Task Card – Part 1



Team Task: 15 Minutes

1. Read your team role. (1 min)
2. Follow the **Directions for Part 1** on the Google Sheet. (14 min)



RM

Share your screen with the CC3 eBook. Make sure the problems are read aloud.

F

Read this task card and the Google Sheet directions aloud.

TM

With 2 minutes remaining, lead an “I Spy” by looking at the other team tabs.

RR

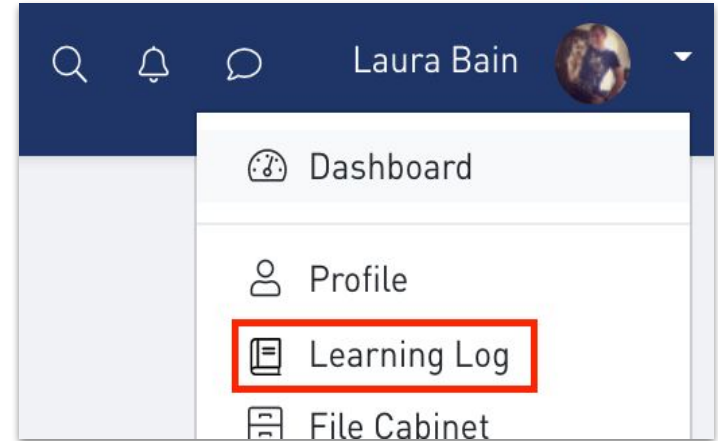
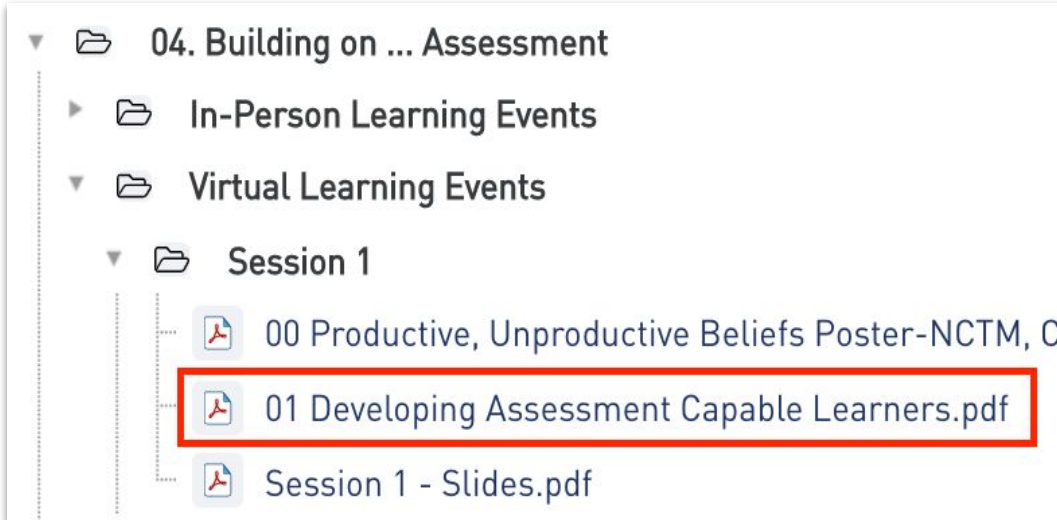
Type the concept/topic and problem number on your Team tab.

Screen Break

Take a break and walk away from the computer.

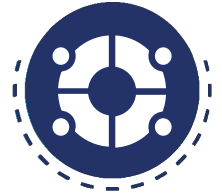


** In the on-demand module, you read “Developing Assessment Capable Learners” and wrote a Learning Log. Please open that Learning Log.*



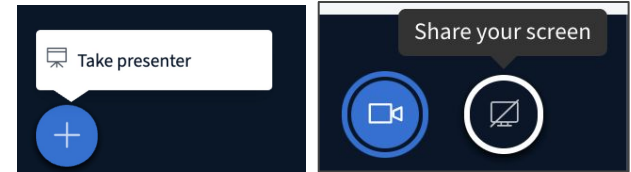
Learning Trajectory

Team Room Task Card – Part 2



Team Task: 16 Minutes

1. Read your team role. (1 min)
2. Follow the **Directions for Part 2** on the Google Sheet. (15 min)



RM

Share your screen with the eBook.

F

Make sure all voices are heard as your team classifies the problems.

TM

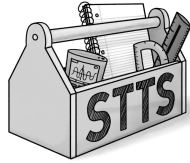
Keep track of the time.

RR

Type the concept/topic on the Chapter 1–3 Learning Trajectory tab.

Learning Trajectory

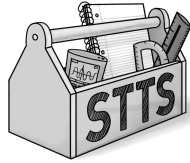
Gallery Walk



- + What do you notice?
- + What is appropriate to assess summatively?
- + What is appropriate to assess formatively?
- + What concepts are in more than one chapter?

Learning Trajectory

Partner Chat



How can the Learning Trajectory support CPM's philosophy of mastery over time?

Building Equity into Your Assessment Culture

Developing Assessment Capable Learners



Learning Log: 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 in new directions?

What **challenges** or puzzles have come up in your mind from the ideas and information presented?

Building Equity into Your Assessment Culture

Developing Assessment Capable Learners



Assessment Capable Learners:

- + Are aware of their current level of understanding in a learning area.
- + Understand their learning path and are confident enough to take on the challenge.
- + Can select tools and resources to guide their learning.
- + Seek feedback and recognize that errors are opportunities to learn.
- + Monitor their own progress and adjust course as needed.
- + Recognize what they're learning and can teach others.

Building Equity into Your Assessment Culture

CPM and Assessment Capable Learners



What structures
are embedded
within
the curriculum
to support the
development of
assessment
capable
learners?

Chapter 7 Exponential Functions

Chapter 7 provides an opportunity for you to learn more about the family of exponential functions. You will also build more advanced algebra skills, such as solving for an indicated variable, simplifying or rewriting exponential expressions, working with fractional exponents, and finding the exponential function that passes exactly through any pair of given points.

You will learn about several important applications of exponential functions.

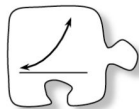
Guiding Question

Mathematically proficient students make sense of problems and persevere in solving them.

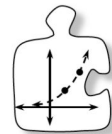
As you work through this chapter, ask yourself:

Am I making connections between the multiple representations and making sense of the situations?

Chapter Outline



Section 7.1 In Section 7.1, you will investigate a family of exponential functions. You will recognize exponential growth when given situations, tables, graphs, or equations, and you will make connections between these representations. You will also extend your knowledge of exponents and their properties and learn how to use these properties, along with the algebra skills you already possess, to solve exponential equations. You will be introduced to step functions. At the end of the section, you will get to apply exponential functions to real-life situations involving growth and decay.



Section 7.2 In Section 7.2, you will find exponential equations that fit given data. In doing so, you will learn about fractional exponents.

Building Equity into Your Assessment Culture

CPM and Assessment Capable Learners



This problem is the checkpoint for rewriting equations with more than one variable. It will be referred to as Checkpoint 6A.

[Homework Help](#)

Solve each equation for the indicated variable.

a. $-3x + 5y = -10$ (for y)

b. $y = mx + b$ (for x)

c. $A = \pi r^2$ (for r^2)

Check your answers by referring to the Checkpoint 6A materials located at the back of your book.

Ideally, at this point you are comfortable working with these types of problems and can solve them correctly. If you feel that you need more confidence when solving these types of problems, then review the Checkpoint 6A materials and try the practice problems provided. From this point on, you will be expected to do problems like these correctly and with confidence.

[Checkpoint 6A: Rewriting Equations with More Than One Variable](#)

Building Equity into Your Assessment Culture

CPM and Assessment Capable Learners



1. TEAM BRAINSTORM

What have you studied in this chapter? What ideas were important in what you learned? With your team, brainstorm a list. Be as list of Learning Log entries and Math Notes boxes are below.

What topics, ideas, and words that you learned *before* this chapter are connected to the new ideas in this chapter? Again, be as de

Now consider the Standards for Mathematical Practice. Obtain the [Closure Resource Page: Standards for Mathematical Practice](#) Practices did you use in this chapter? When did you use them? Give specific examples.

How long can you make your list? Challenge yourselves. Be prepared to share your team's ideas with the class.

Learning Log Entries



- [Lesson 7.1.1](#) – Investigating $y = b^x$
- [Lesson 7.1.2](#) – Multiple Representations Web for Exponential Functions
- [Lesson 7.1.5](#) – Graph \rightarrow Equation for Exponential Functions
- [Lesson 7.1.6](#) – Important Ideas about Exponential Functions
- [Lesson 7.2.1](#) – Zero, Negative, and Fractional Exponents

Math Notes

- [Lesson 7.1.1](#) – Graphs with Asymptotes
- [Lesson 7.1.3](#) – Compound Interest

Building Equity into Your Assessment Culture

CPM and Assessment Capable Learners



CC Algebra

Search



Lesson (ENG)

Lección (ESP)

Answers

Teacher Notes

My Notes

4. WHAT HAVE I LEARNED?

Most of the problems in this section represent typical problems found in this chapter. They serve as a gauge for you. You can use them to determine which types of problems you can do well and which types of problems require further study and practice. Even if your teacher does not assign this section, it is a good idea to try these problems and find out for yourself what you know and what you still need to work on.

Solve each problem as completely as you can. The table at the end of the closure section has answers to these problems. It also tells you where you can find additional help and practice with problems like these.

CL 7-112. Find an exponential function in $y = ab^x$ form that satisfies each of the following sets of conditions.

- Has a y -intercept of $(0, 2)$ and a multiplier of 0.8 .
- Passes through the points $(0, 3.5)$ and $(2, 31.5)$.

Answers and Support for Closure Activity #4: *What Have I Learned?*

Note: MN = Math Note, LL = Learning Log

CL 7-112. Solution

- $y = 2(0.8)^x$
- $y = 3.5(3)^x$

Need Help?

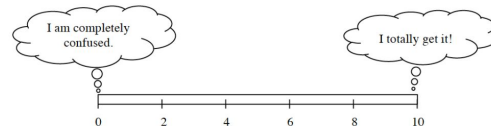
[Lessons 7.2.1](#) and [7.2.2](#)

More Practice

Problems [7-24](#), [7-36](#), [7-62](#), [7-87](#), [7-96](#), and [7-106](#)

CL 5-114. For each of the problems above, do the following:

- Draw a bar or number line that represents 0 to 10.



- Color or shade in a portion of the bar that represents your level of understanding and comfort with complex problems.

If any of your bars are less than a 5, choose *one* of those problems and complete one of the following tasks:

- Write two questions that you would like to ask about that problem.
- Brainstorm two things that you DO know about that type of problem.

If all of your bars are a 5 or above, choose one problem and do one of these tasks:

- Write two questions you might ask or hints you might give to a student who was stuck on the problem.
- Make a new problem that is similar and more challenging than that problem and solve it.

Building Equity into Your Assessment Culture

Assessment for Equity



- A. Assessments and “measurement” should be used to gauge student learning, development, and improvement over time.
- B. Assessments should be used by teachers to adjust their practices (how they teach, what they teach, when they teach, and so forth) to respond to and meet the needs of students.
- C. Students should not feel intimidated by assessments, but see them as opportunities to get a snapshot, a picture of where they are and what they need to do to improve.
- D. Punitive assessments send the wrong message and can raise anxiety among learners, especially the ones who most need our support.
- E. Assessment tools should be just as diverse as the students who take them.

Building Equity into Your Assessment Culture

Closure



Private Chat

Share why you selected your chosen reminder.

- A. Assessments and “measurement” should be used to gauge student learning, development, and improvement over time.
- B. Assessments should be used by teachers to adjust their practices (how they teach, what they teach, when they teach, and so forth) to respond to and meet the needs of students.
- C. Students should not feel intimidated by assessments, but see them as opportunities to get a snapshot, a picture of where they are and what they need to do to improve.
- D. Punitive assessments send the wrong message and can raise anxiety among learners, especially the ones who most need our support.
- E. Assessment tools should be just as diverse as the students who take them.

Closure

Outcomes



Participants will:

- + Reflect on the efficacy of their current summative assessment practice.
 - + Identifying Productive and Unproductive Assessment Beliefs
- + Examine the chapter progression.
 - + Learning Trajectory
- + Examine and reflect on equitable assessment practices.
 - + Building Equity into Your Assessment Culture, Developing Assessment Capable Learners

Closure

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.
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	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.

Closure



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