



CARNEGIE MATH
PATHWAYS
WestEd

WEBINAR SERIES:

**A Dialogue About What
Works in Education**

Keep Calm and Teach On: Best Practices for Online and Hybrid Math Instruction





Session Goals

We'll highlight:

- Our approach, model, and framework for keeping students engaged
- Share faculty perspectives including promising practices
- Provide insights from our network of institutions and instructors

Presenters



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Math Literacy Pathway Coordinator
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Dan Ray

Lead for Faculty Development
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**Of the 1,100,000 first-time students
enrolling in community college annually,**



3 out of 5 students
are placed in a remedial math course.



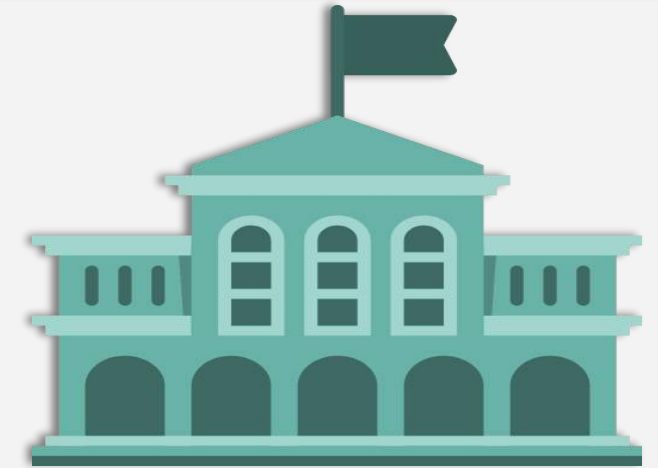
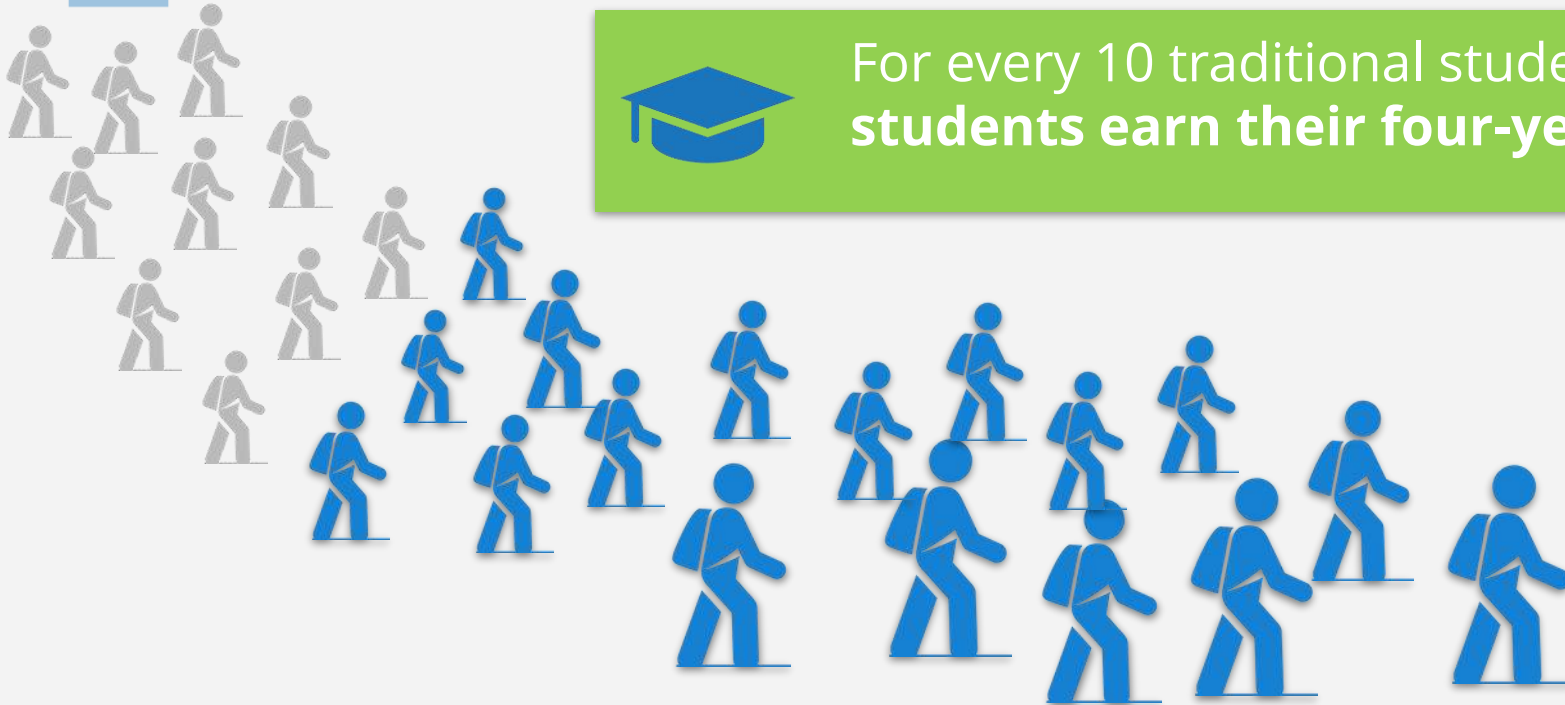
For every 10 traditional students, **more than 15 Statway students** earn their two-year degree/credential



For every 10 traditional students, 17 Statway students transfer to a four-year institution



For every 10 traditional students, **more than 22 Statway students** earn their four-year degree



Intentional Design

Our network of faculty have developed a suite of courses following a set of critical design principles:

Accelerated Pathways



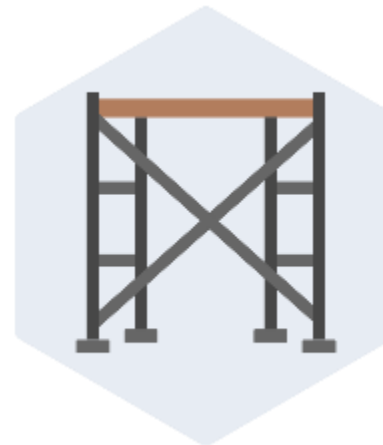
Help more students achieve college math credit in less time and advance toward their goals

Relevant curriculum and researched-based pedagogy



Ensure high quality learning opportunities for all students

Appropriate supports built into the course



Deliver targeted and effective scaffolding for students who need additional support

Embedded Social Emotional Supports



Foster growth mindset, confidence, and belonging to support the whole learner

Productive Persistence: Tenacity + Good Strategies

Aim:

Students continue to put forth effort during challenges and when they do so they use effective strategies.

Growth Mindset – Students believe they are capable of learning

Social Belonging – Students feel socially connected to the instructor, peers, and the course

Course Value – Students believe the course has value

Skills & Know-How – Students have skills, habits, and know-how to succeed in course

Support – Faculty and college support students' skills and mindset

First Week

During the first week:

- Orientation Session
- Go through first group work session together

This helps to set the ground work for the semester, explaining the course, course products, etc. Students really appreciate these sessions – especially in an asynchronous course.

One of my themes is going to be: Do what you do in-person!



Thinking About Virtual Classes

- Group work can still be done
- Discussion can still happen
- White boards can be used
- Student work can be shared

Just about any active learning activity can be adapted and conducted in the virtual environment.

For instance: Worried your groups aren't working together? Use Google Docs to monitor what groups are writing and "pop in" on groups that are struggling.

For Week 3:

There are 4 required activities in Realizeit for Unit N.3 and 4 activities for Unit N.4. See Unit links in Canvas for more details. Remember there is an order to completing the activities. You will not do well if you try to do them out of order.

CAUTION: There is a LOT of material in Collaboration N.4! Be sure to read through all of the introductory information for Unit N.4 so you know what to expect. You should also click on the UNIT N.4 COLLEGE tab in Canvas so you know which problems you can skip while in your small groups in Zoom.

Monday: (Complete Unit N.3 Corequisite and prepare for Unit N.3 College)

Read through the summary PowerPoint from Collaboration N.2, posted with Unit N.2 on Canvas (if you have not already done so).

Read the introductory materials for Unit N.3 Corequisite posted with Unit N.3 materials on Canvas.

Complete *Unit N.3 Corequisite* lesson (during class time).

Complete *Unit N.3 Corequisite* Practice Problems in Realizeit.

Read through any introductory materials for Unit N.3 College, posted with Unit N.3 materials on Canvas.

Complete *Exercise N.2 activity* and next *Preparation N.3 activity* as well as the *After Preparation N.3* survey (all of these are in Realizeit).

Tuesday: (Complete Unit N.3 College Collaboration)

Review any posted introductory materials for Unit N.3, on Canvas.

Meet with group to do *Collaboration N.4* activity (during class time).

Wednesday: (Complete Unit N.4 Corequisite and prepare for Unit N.4 College)

Read through the summary PowerPoint from Collaboration N.3, posted with Unit N.3 on Canvas.

Read through the introductory materials for Unit N.4 Corequisite posted with Unit N.4

I have found weekly hints to be extremely useful for students in the virtual environment – even if meeting synchronously.

It tells them what to do each day and helps them stay on track.

This is from a class that is meeting synchronously four days per week.

For my asynchronous classes, I post a lot of information on our LMS.

I also send a lot of email!

But I want to make sure students are reading the messages – so I don't send them too often.

I email groups as well as students individually.

Good morning Group D! ☕

I know you have been struggling a bit with some of the problems in the collaborations. I'm sorry that I have not been able to join you when you were first struggling. 😞 I just wanted to tell you that it's okay if you don't get every question. The reason full solutions are provided is so that you can check your answers as you go - and so that missing one question won't hold you back from future problems. Please be sure to use all of the available hints and view all solutions - even if you think you've done a problem correctly.

I also wanted to reach out to remind you that I do post a PowerPoint for each unit in Canvas AFTER the collaboration sessions. I recommend that you view the PowerPoint as a slide show so you can watch the animations as you work through the problems and click through the slides. I post them with the material for the Unit. For instance, the one for Unit N.5 is posted with Week 3 materials so it would be at the bottom of the Canvas home page (since it was last week). The one for Unit N.6 was posted this morning and would be at the top of the Home page in Canvas with the material for this week. These should help some - but let me know if you still have questions or concerns about any material. And don't forget to read through the Introductory Comments for each unit also as there can be information there to help with the unit too.

As I have mentioned to several students already: Please don't ever hesitate to reach out to me with questions. I don't want anyone to get discouraged! Productive struggle means trying hard, using all of the resources available, and asking me for help when you need it - so you don't end up just "spinning your wheels". 😎

Using Support from Colleagues





Sample Course Survey

I am able to navigate the Canvas site for this course to find what I need.

⋮ Question

0 pts

I am able to navigate the Pathways/Realizeit site to find what I need.

⋮ Question

0 pts

I know how to contact my instructor in this course if I need to do so.

⋮ Question

0 pts

I understand what assignments and activities I need to complete this semester.

⋮ Question

0 pts

Building Community

- Question of the day
- A culture of productive struggle
- Fostering sustained communication with discussion board assignments



Question of the Day

- What is the longest car ride you have been on?
- Who are four musical artists you listen to?
- Would you rather live in a place where it snowed every day or a place where it was never below 100 degrees?
- What made you laugh today?
- If you were to create a slogan for your life, what would it be?
- If you could go back in time two years, what advice would you give to yourself?



"Baby Reaching For An Apple"
Mary Cassatt (1893)

"We use the word struggle to mean that students expend effort to make sense of mathematics, to figure something out that is not immediately apparent. We do not use struggle to mean needless frustration or extreme levels of challenge created by nonsensical or overly difficult problems. We do not mean the feelings of despair that some students can experience when little of the material makes sense. The struggle we have in mind comes from solving problems that are within reach and grappling with key mathematical ideas that are comprehensible but not yet well formed."

(Hiebert & Grouws, 2007)

Discussion Board Assignments

- Small groups
- Instructor involvement and early feedback
- Pre-assessment and polls
- Relevance
- Roles
- Clear expectations and assessment criteria
- Build up to sustained conversations

Discussion Board Assignments

- Questions without questions

A hair stylist is reviewing sales data from the previous month. The revenue from services was \$4,600 and her net profit was \$2,800. By selling hair-care products, she brought in an additional \$710 revenue which earned her another \$105 in profit.

- Polling for pre-assessment

What is the total distance that your finger has moved on a touchscreen, phone, tablet, etc. Scrolling through web pages, playing games, using apps, etc., think about every device you've ever used for your entire life, and estimate how far you've swiped.

- Sustained conversations

Which movie was more successful?

Scenario #1: Horror movies. Candyman (1992) vs. Us (2019)

Scenario #2: Bruce Willis movies. Die Hard (1988) vs. The LEGO Movie 2 (2019)



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To learn more, visit our website at:

www.carnegiemathpathways.org

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Q&A With Carnegie Math Pathways Presenters



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