EF+Math Program

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"Finding Common Ground" - CueThinkEF+

Description

This resource is provided as an example of the Inclusive Research Key Action of “Create opportunities for shared learning about the research, classroom experiences, and the school community." This slide deck provided useful information to school districts who partnered with CueThinkEF+ to promote shared learning experiences related to the CueThinkEF+ project as well as other foundational information to support the partnership. Please see the slide deck below. The agenda for this presentation is as follows:

- Project Overview
- Break
- Connections To Your Goals In The Math Classroom
- CueThinkEF+ Demo
- Dinner
- Break
- Equity and Problem-Solving
- Co-creating Project Goals
- Setting The Stage For Our Next PL

Welcome To Our Year 2 Cohort!

CueThinkEF+: Finding Common Ground

September 30, 2021

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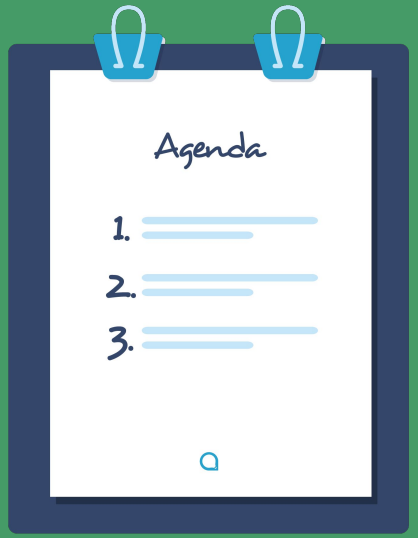
Agenda



- Project Overview
- Break!
- Connections To Your Goals In The Math Classroom
- CueThinkEF+ Demo
- Dinner Break!
- Equity and Problem-Solving
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Project Overview

Intersection of problem-solving, equity, and executive function

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Think & Reflect

We are all here to improve math learning for all of our students!

Why did we become teachers? Why math?

Think & Reflect

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Why did we become teachers? Why math?

Tell us about your students:

- What strengths do they bring?
- Anything about their lives/backgrounds?
- Strengths to foster in your students?

Math Learning In The USA

Decades of learning science research and teacher expertise reveal that every child is equipped to excel in mathematics...

... and yet disparities in mathematics learning still persist.

Think & Reflect

What are the challenges with math learning for your students?

Math Learning In The USA

Students of color and students in poverty are more often **held back**, offered **less challenging math curricula**, and held to **lower expectations** (among other factors) than their peers from higher income households or their white peers.

(Carbonara, 2005; Chunn, 1998; Oakes, 1995; Sorhagen, 2013)

Thoughts From Last Year

- My students have an incredible amount of potential and deserve any **opportunity** I can give them
- I want to give them a different **opportunity** to understand material in a variety of ways
- I want to make sure my students are **pushed to learn and grow**
- I want them to **feel math is doable**
- I want everyone to **improve and grow** (myself included)
- I want to see them **happy and excited for math**
- I want my students to **believe more in themselves** and that they CAN do math!

Executive Function Skills Are Critical For Success

Executive functions (EF) allow students to have agency over their attention, emotions and behavior to **achieve the learning goals they set for themselves.**

This means:

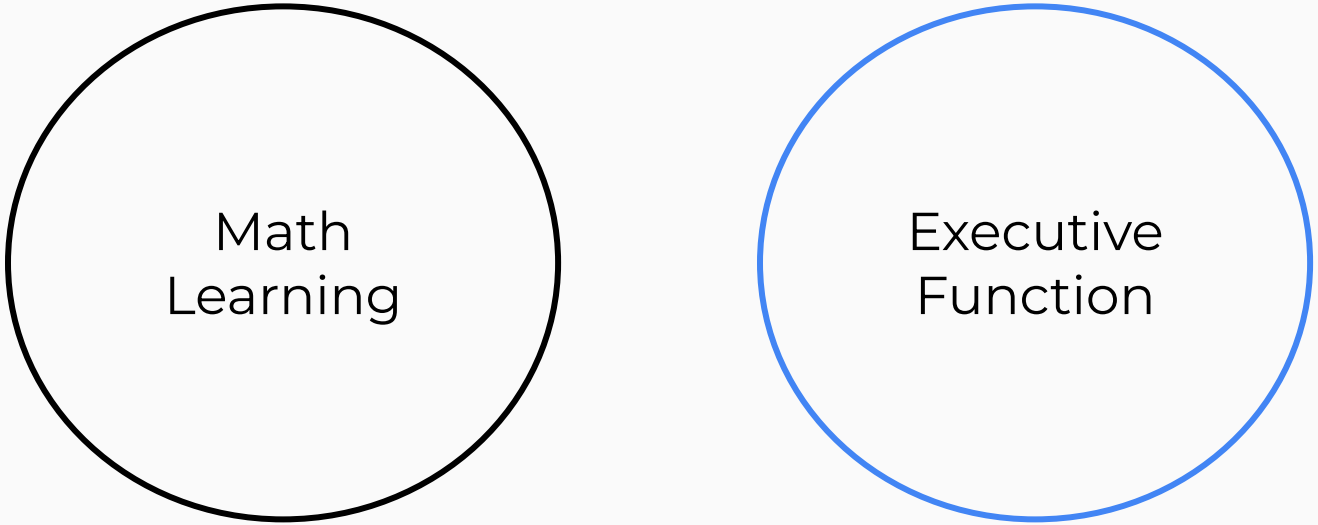
- hold and work with information in mind
- focus attention on what is important, ignore what isn't
- be flexible in thinking

Think & Reflect

Where have you seen successes or growth in your students' EF skills?

However...

Exercising EF skills in isolation **do not** transfer to gains in math.



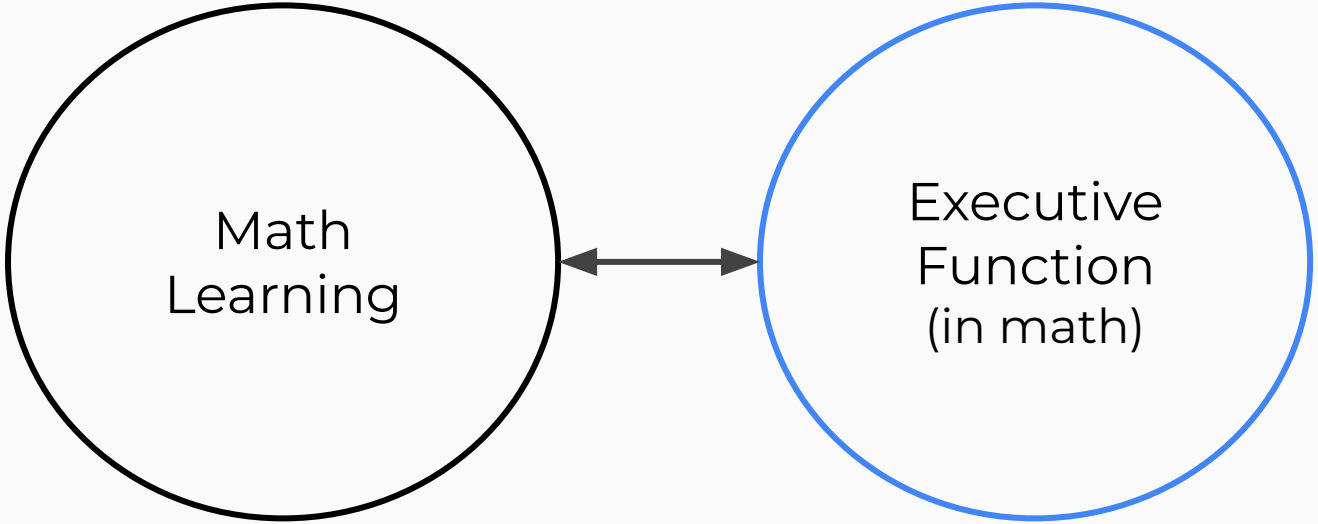
But Interestingly...

The most successful EF interventions are those that **build EFs in the contexts** in which they are intended to be expressed.

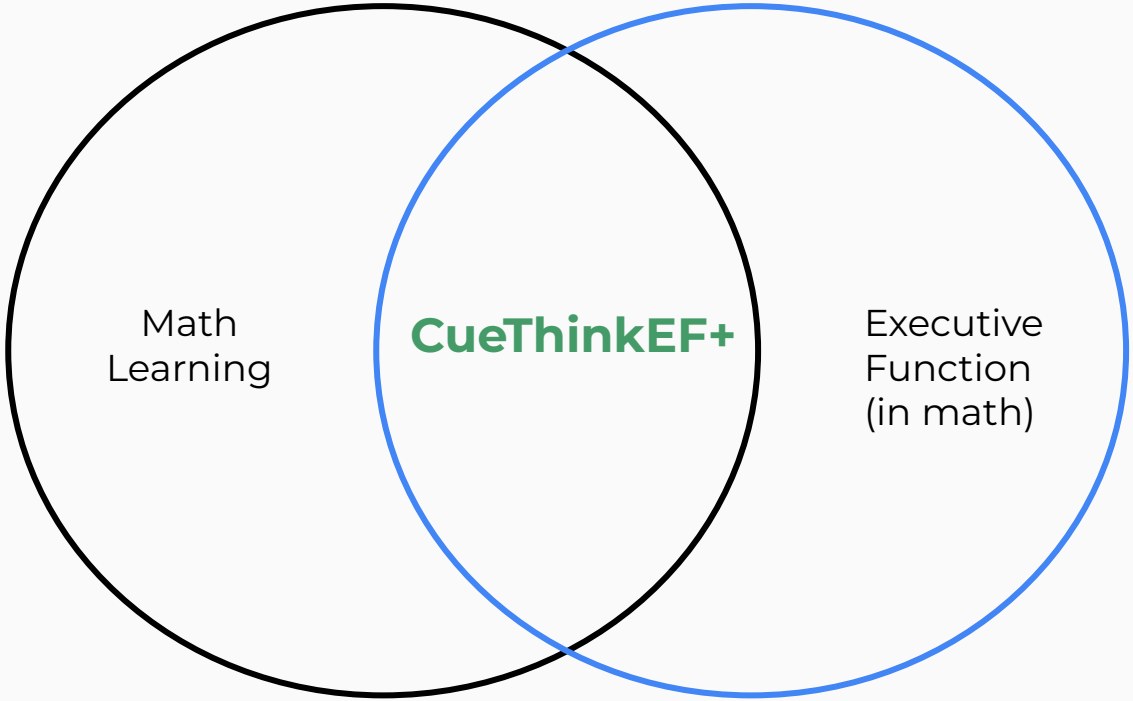
(Clements et al., 2016; Strobach & Karbach, 2016)

The Theory Of This Research Study Is...

Challenging math → Exercises EF in math context → Further develops EF and impacts math learning



CueThinkEF+ Is The Vehicle To Exercise EF



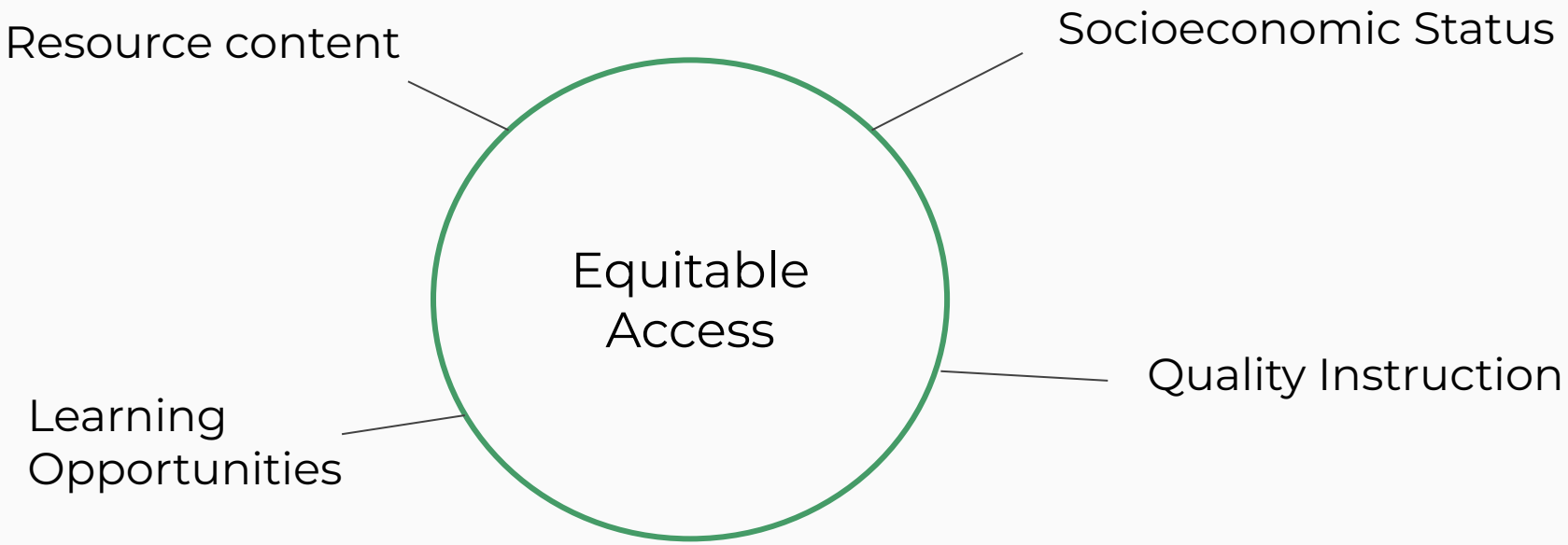
Think & Reflect

What questions do you have?

What's resonating with you?

But We Can't Look At EF And Math Learning In Isolation

Not all students are given equitable opportunities to build their math ability, mindset, and identity.



Which Is Caused By A Systemic Issue

Students are positioned differently in the structurally unequal education system.

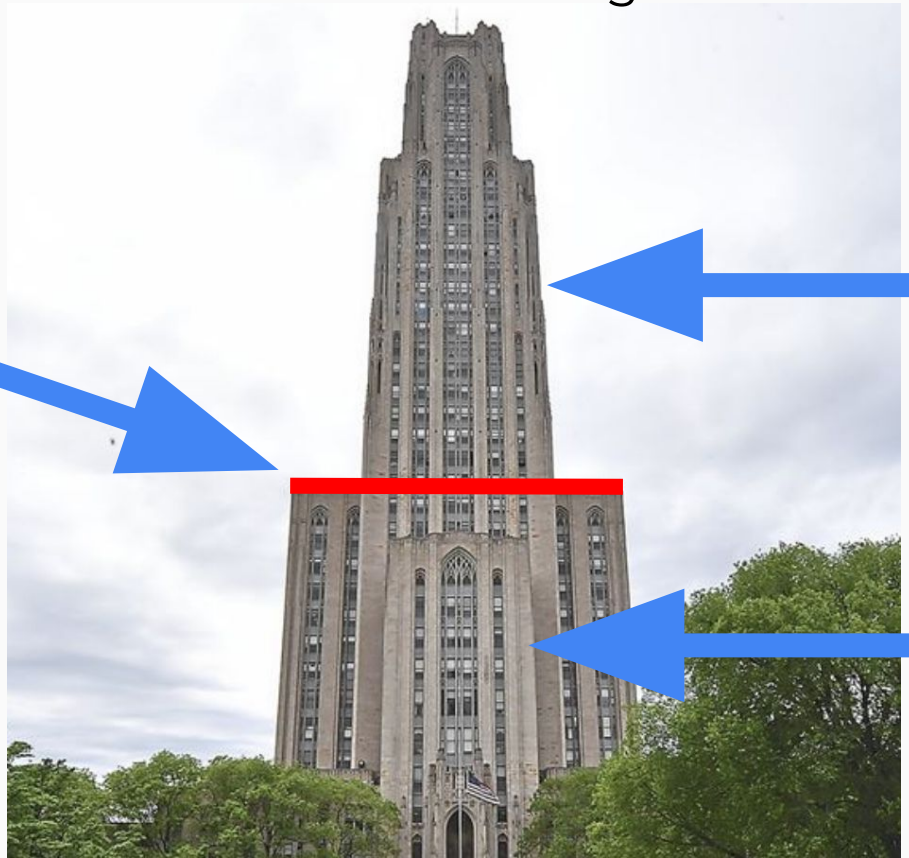
(Ewing, 2019; Powell, 1995; Powell, 2007)

The issue in mathematics education is the need to reduce inequalities between students' opportunities to learn and to be given opportunities to be challenged in mathematics.

(Byrnes & Wasik, 2009; TNTP, 2018).

Which Is Caused By A Systemic Issue

Math Learning



Systemic Biases

Learning Opportunities

Beliefs and Expectations

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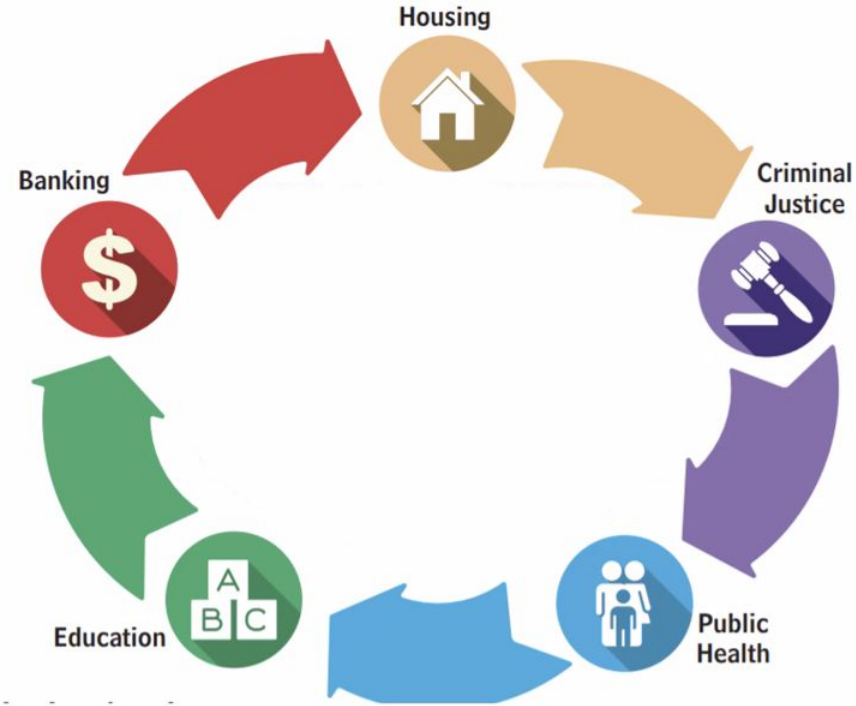
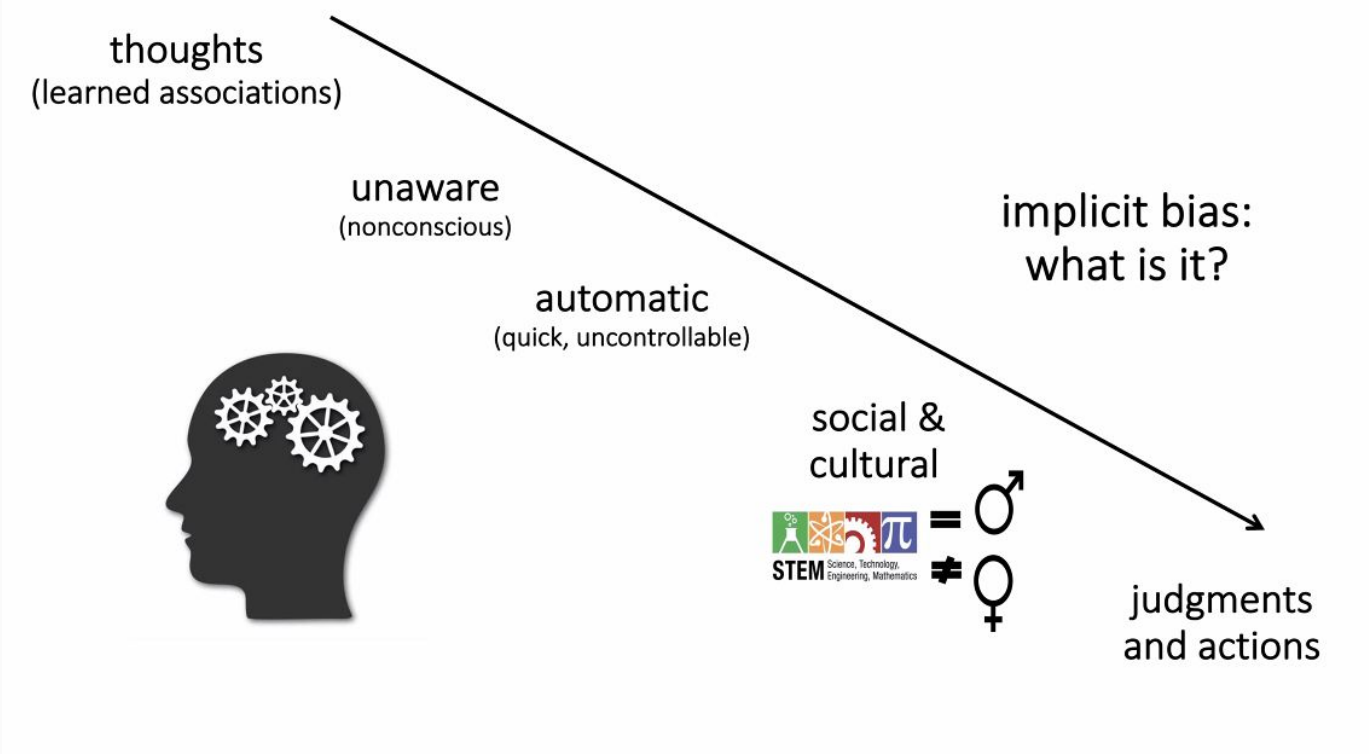
Systemic Racism

Systemic biases



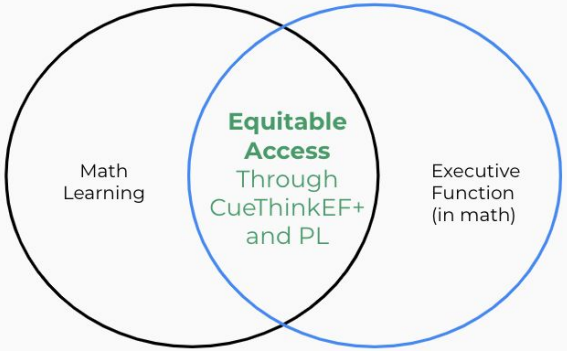
Implicit Bias



“To empower Black and Latinx students and students living in poverty by providing opportunities to build their executive function skills in the context of mathematics.”

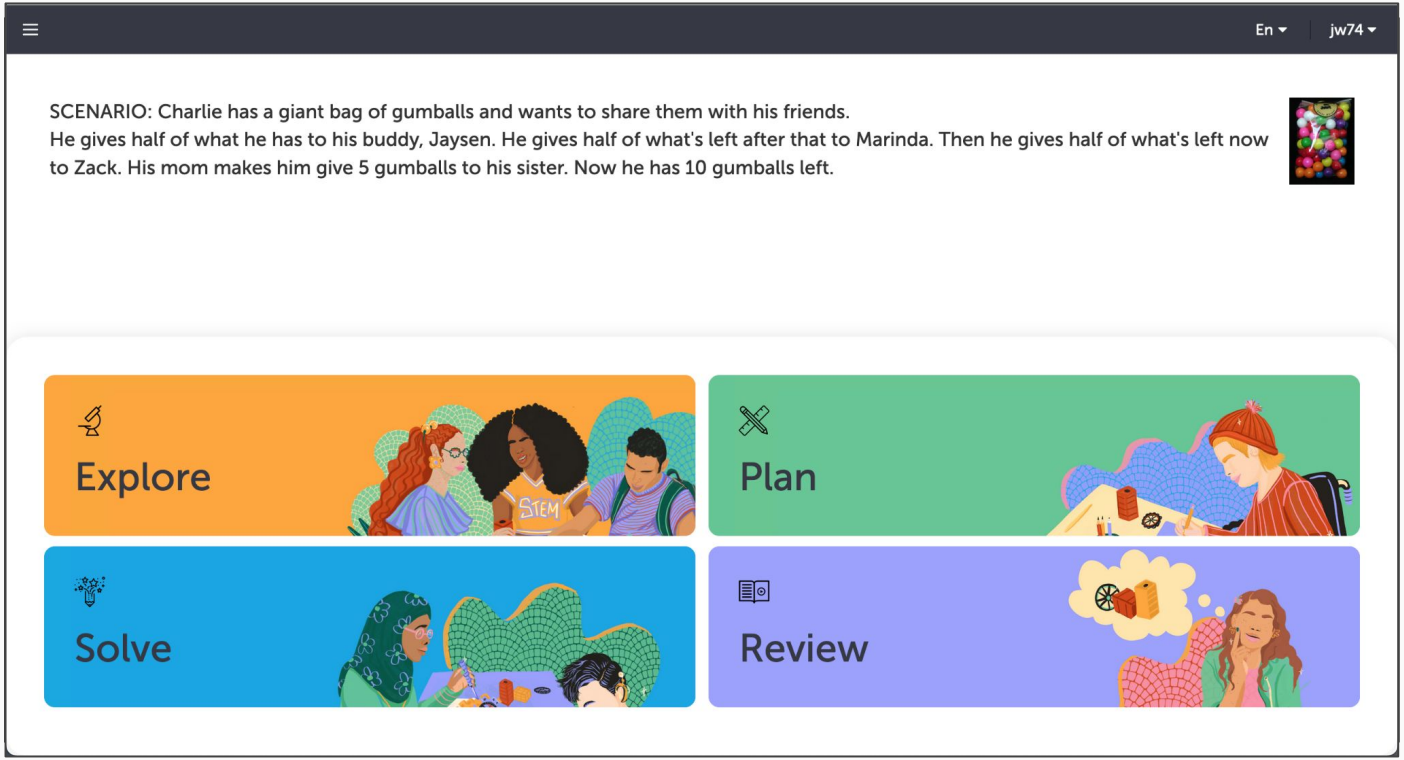
In Summary...

- Design CueThinkEF+ as the vehicle to exercise students' executive function skills in the context of math to impact math learning.
- Disrupt systemic inequities by designing fo and with Black and Latinx students, and students living in poverty.
- Co-design product and professional learning using inclusive R&D to impact future teachers and students.



Year 1 Inclusive R&D Examples

Changing Understand phase to Explore



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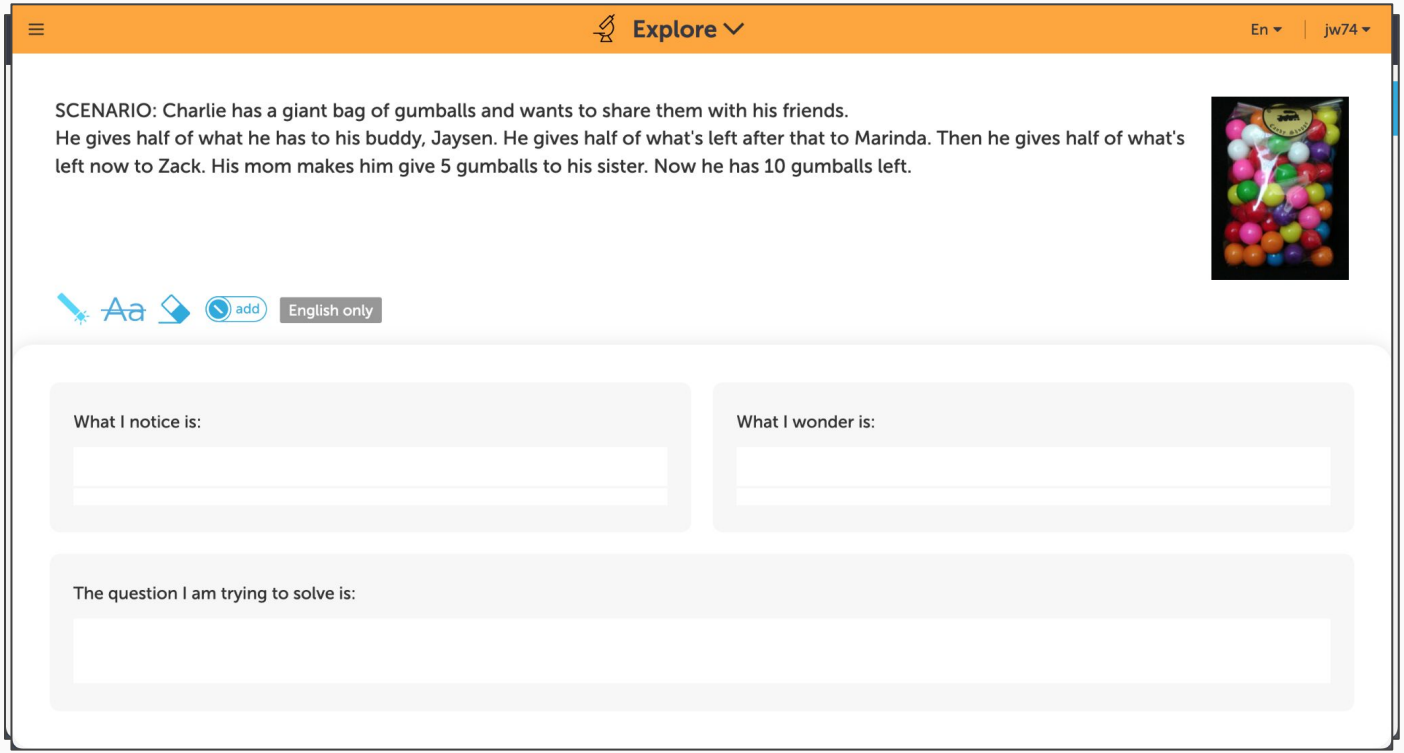
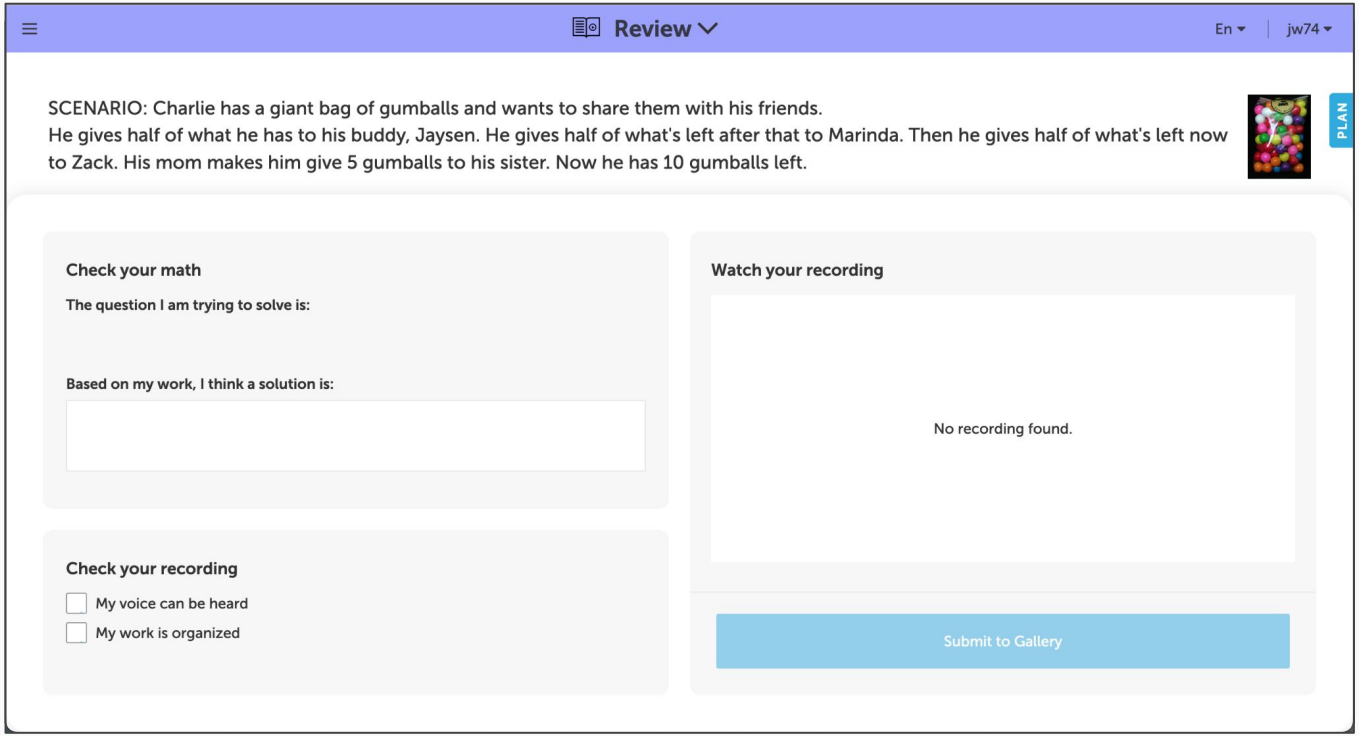
Year 1 Inclusive R&D Examples

Removing the estimate in Explore



Year 1 Inclusive R&D Examples

Simplifying the Review phase



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Break Time!

Connections To Your Math Classroom Goals

CueThinkEF+ Demo

Where we are today with the product

Dinner Break!

Centering Our Work

Things to collaboratively think about in Year 2

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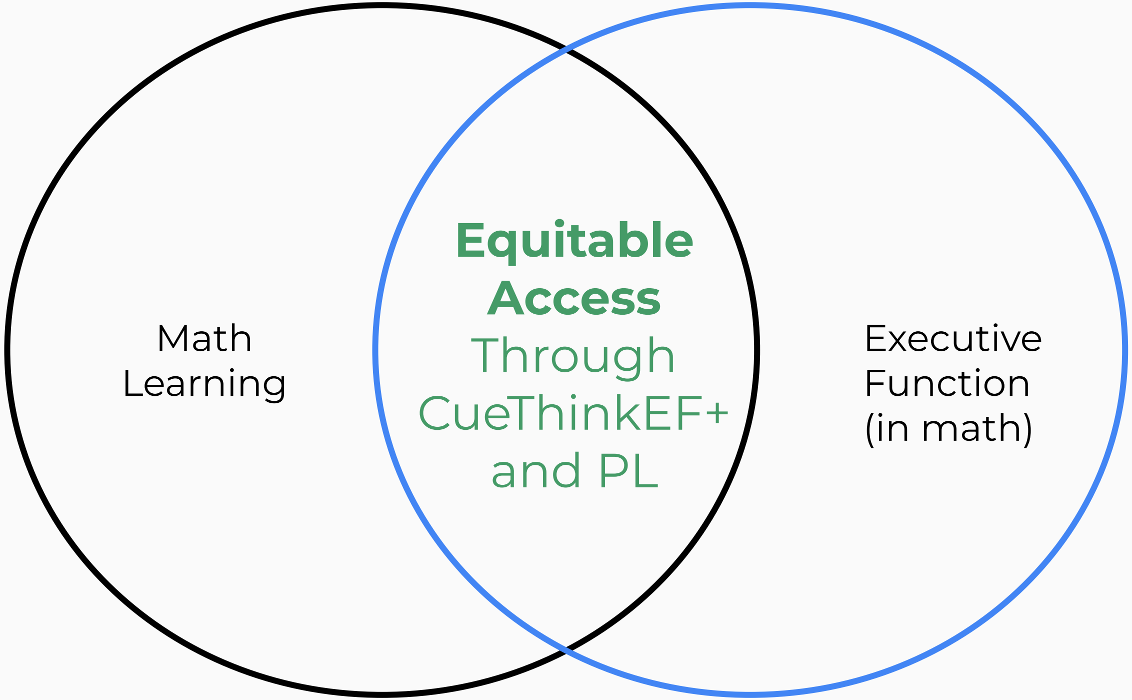
Equitable Access



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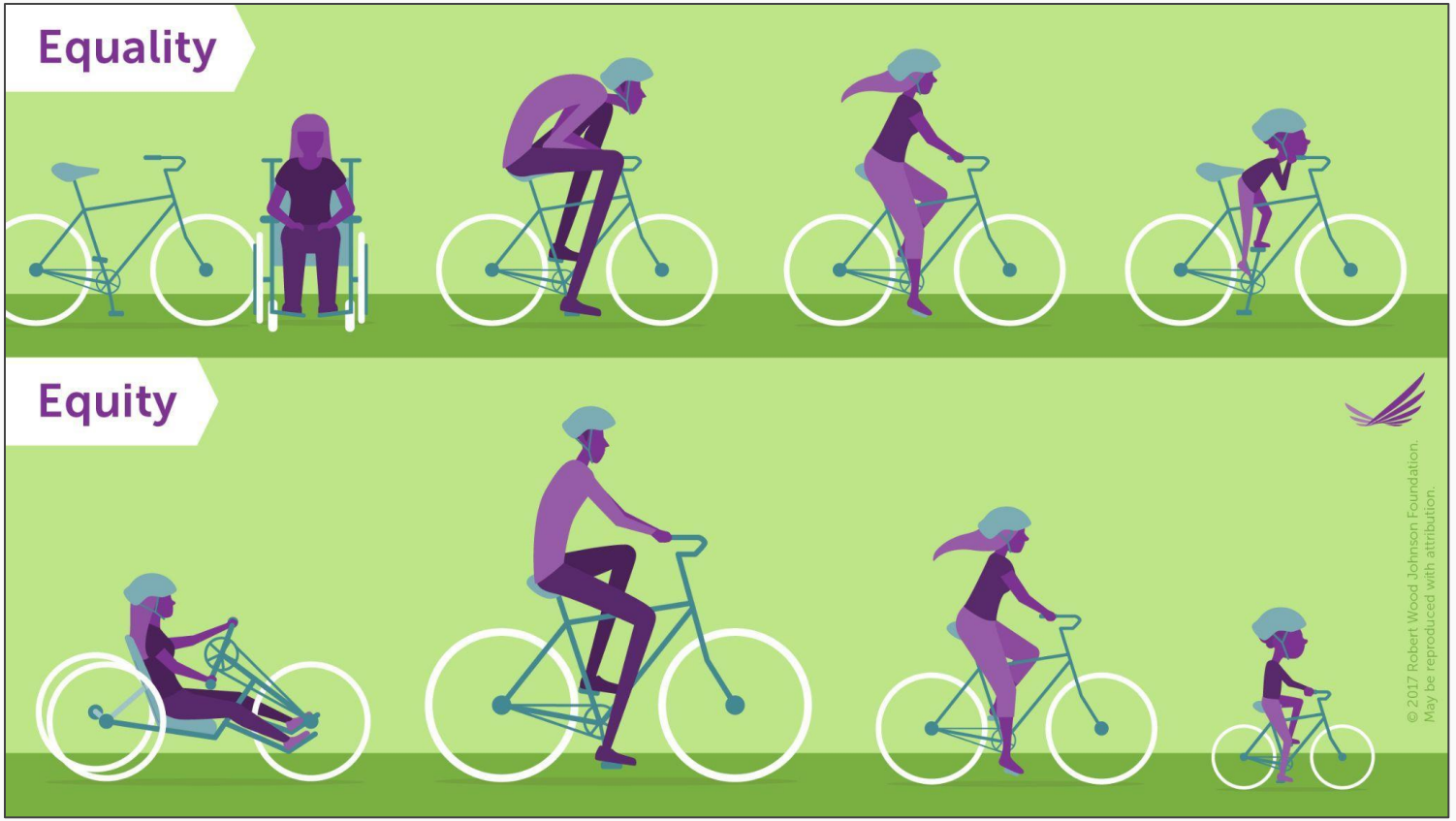
What Is Equity?



Using The Head And The Heart

How Do We Improve Students' Math Learning?

What are the challenges of problem-solving?

- For students?
- For you?

What strategies have worked well for you in the past?

Co-creating Project Goals

Where are we going this year?

Setting The Stage

For Our Next PL

Thank you for joining us!