Lessons Learned on the Intersection of Equity and the Standards

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UnboundEd

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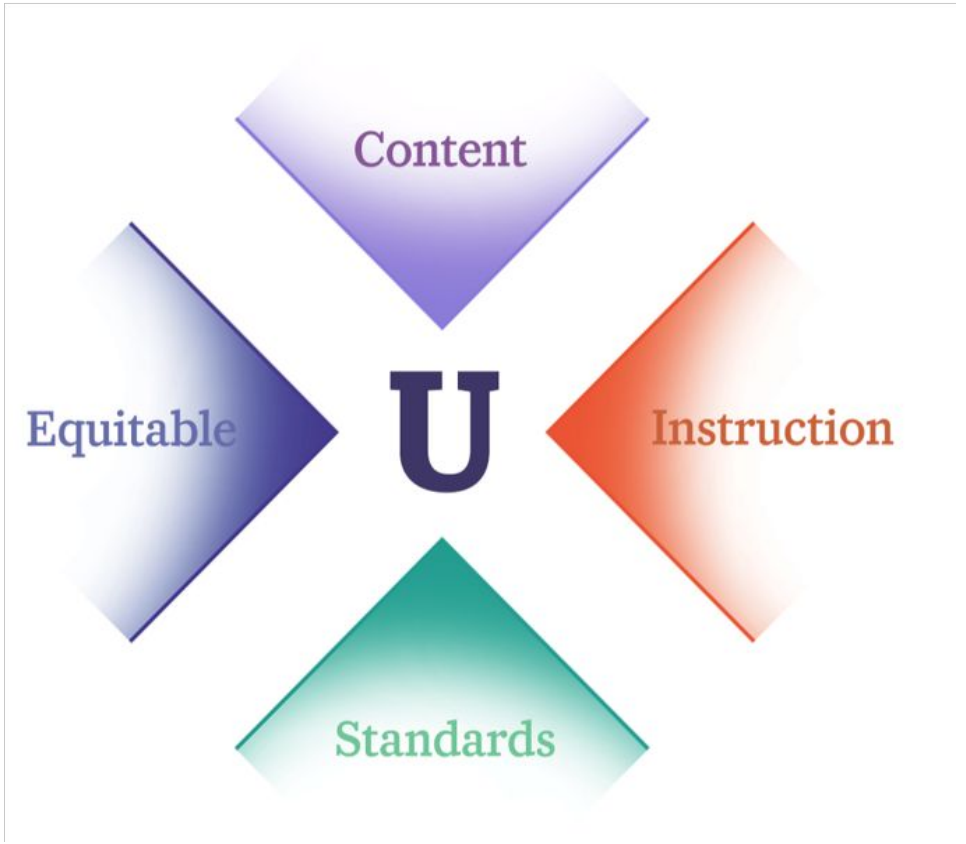
UnboundEd

UnboundEd, founded in April 2015, is a team of former classroom teachers, school leaders, curriculum writers, and program managers who have worked in the public, private, and nonprofit sectors.

We are dedicated to providing free, standards-aligned instructional content and opportunities for immersive training for teachers and leaders who serve students of color and students living in poverty.

The Intersection

Our learning is grounded in the intersection of the standards, content, aligned curriculum, and the equitable instructional practices that are essential for closing the opportunity gap caused by systemic bias and racism.



By the end of the session, you will…

...understand what we've learned in trying to define best practices for causing adult learning and supporting teachers to enact aligned curriculum.

Agenda:

I. Our “Stakes In the Ground”
II. What We’ve Learned:
    A. Working with Aligned Materials
    B. Causing Adult Learning
III. Closing Reflections

Disclaimer

This is a PowerPoint slide explaining that PowerPoint slides, generally, are not an effective means for real learning.

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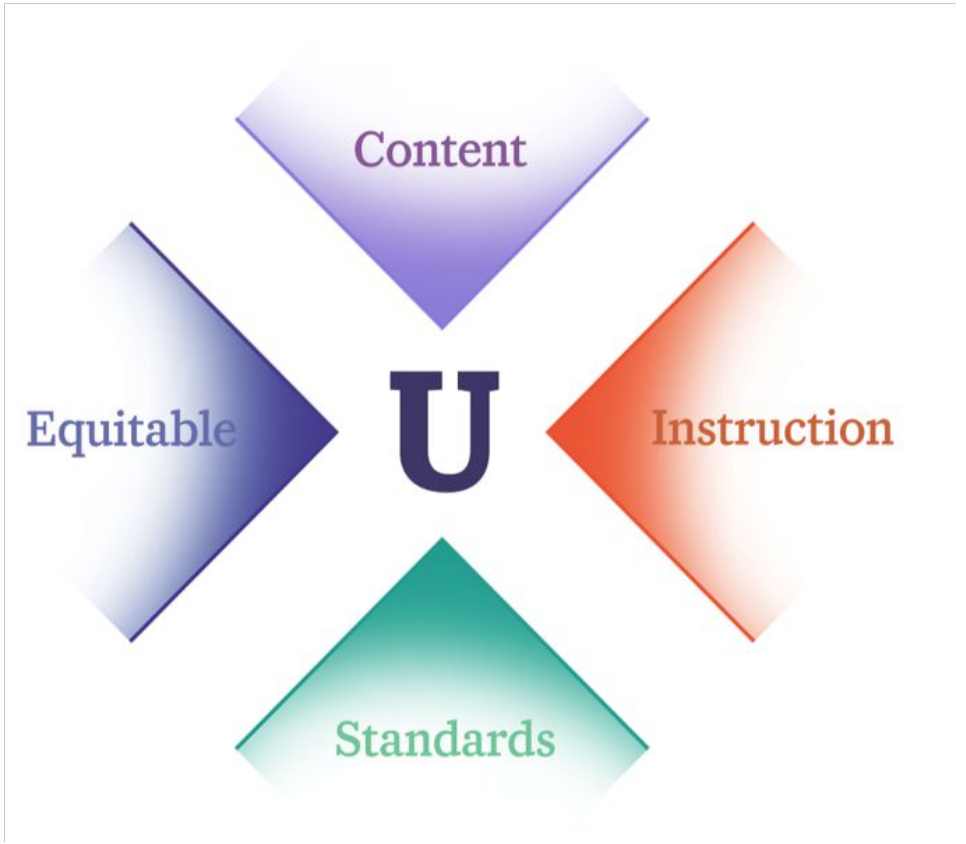
Our “Stakes in the Ground”

What is “the intersection”?

The Intersection

Our learning is grounded in the intersection of the standards, content, aligned curriculum, and the equitable instructional practices that are essential for closing the opportunity gap caused by systemic bias and racism.



Pay Attention to the Details of the Standards

6.RP.A.2 Understand the concept of a unit rate a/b associated with a ratio a:b with b ≠ 0, and use rate language in the context of a ratio relationship. *For example, "This recipe has a ratio of 3 cups of flour to 4 cups of sugar, so there is 3/4 cup of flour for each cup of sugar." "We paid $75 for 15 hamburgers, which is a rate of $5 per hamburger."*

vs.

7.RP.A.1 Compute unit rates associated with ratios of fractions, including ratios of lengths, areas and other quantities measured in like or different units. *For example, if a person walks 1/2 mile in each 1/4 hour, compute the unit rate as the complex fraction 1/2/1/4 miles per hour, equivalently 2 miles per hour.*

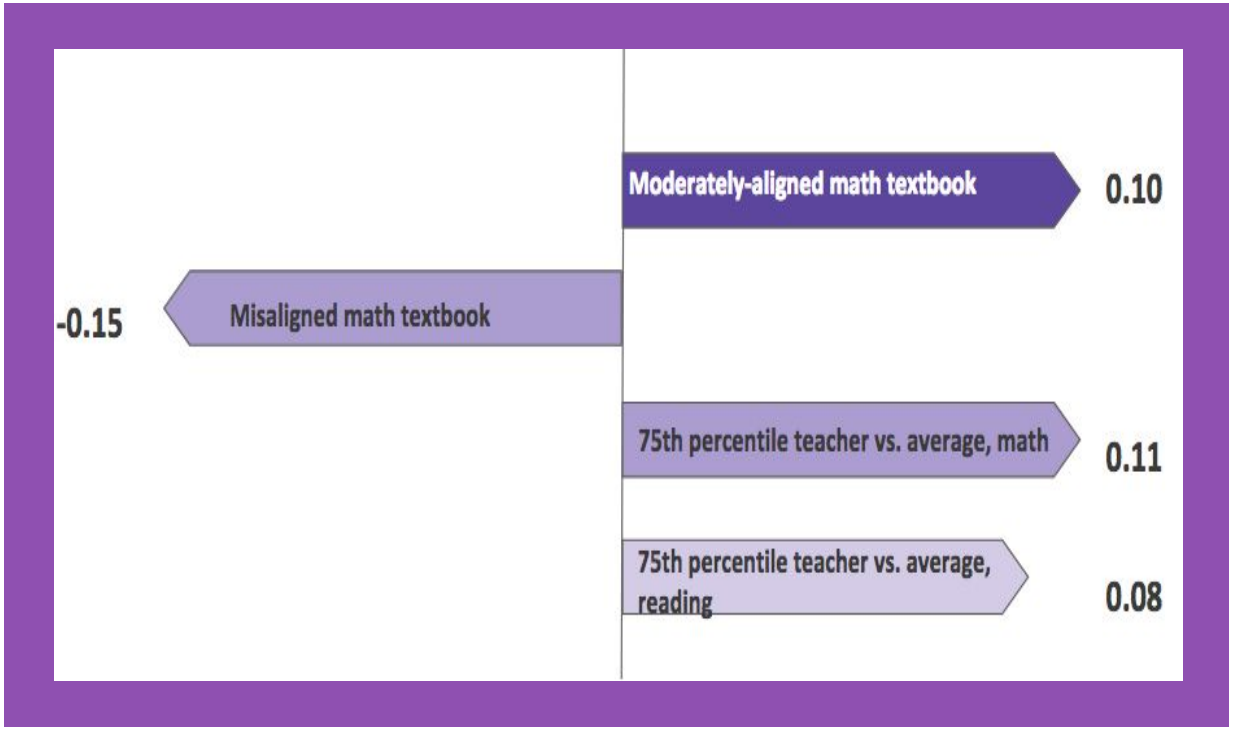
The importance of standards-aligned curricula:

High quality curricula result in higher student achievement

- Polikoff and Koedel (2017) – California Math
- Kane et.al. (2016) – GO Math!
- Jackson and Makarin (2016) – Mathalicious
- NYCDOE (2012) & Stringfield et.al. (2000) – Core Knowledge

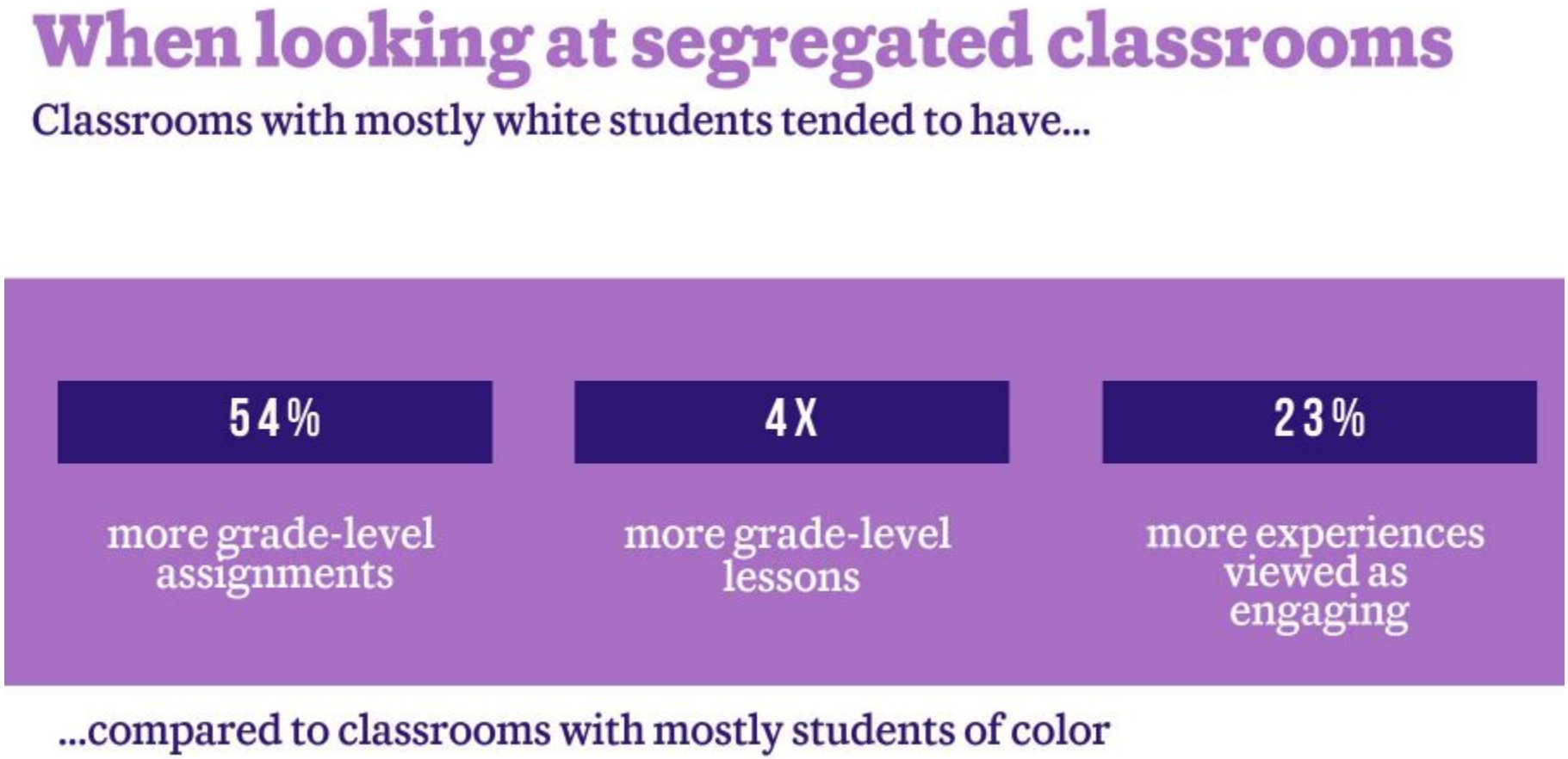
High quality curricula result in higher student achievement

The impact of a moderately-aligned curriculum is almost as much as replacing a teacher in the 50th percentile with a teacher in the 75th percentile.



Source: Hanushek and Rivkin. (2010) and Kane et al. (2016).

It also means paying attention to race:



Source: TNTP (2018).

We must confront the bias that exists in our society...

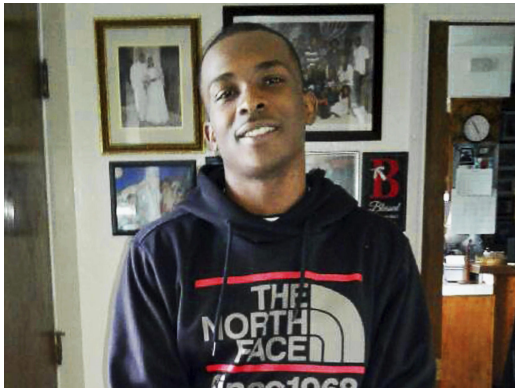
The health care sector exhibits bias

Black women are 3 to 4 times more likely than white women to die from pregnancy-related complications.

Source: Vox (2018).

Law enforcement exhibits bias

People of color make up 38% of the population, 46% of those killed by the police, and 63% of those killed by the police while unarmed.



Source: Vox (2017).

And in education, bias shows up in how we view student behavior, even at a young age

132 preschool educators watched a video of preschoolers and were asked:

Who would require most of your attention?

42% said: the Black boy

13% said: the White girl

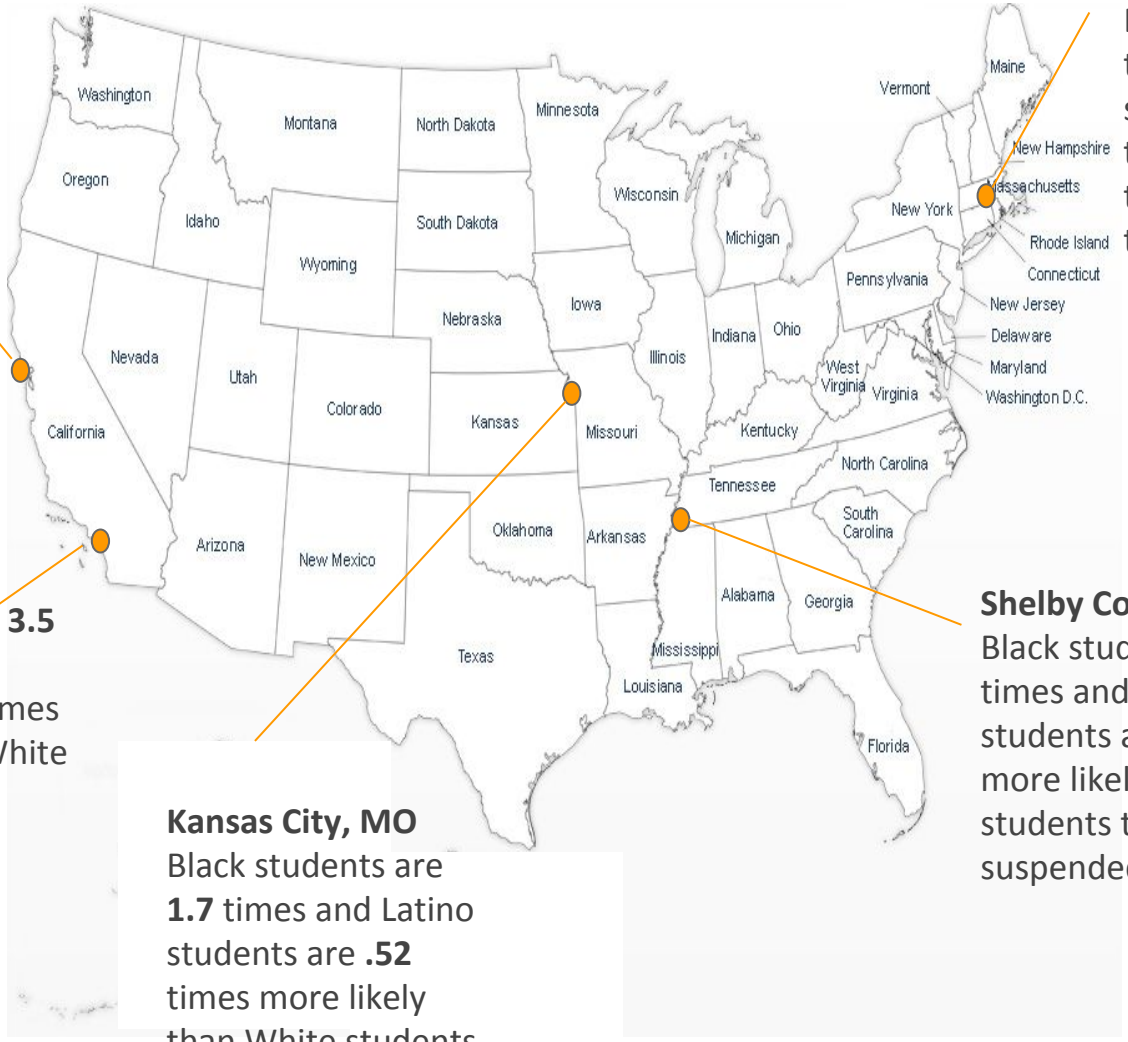
No challenging behaviors were actually observed.

Source: Gilliam et.al (2016).

Black and Latino students are suspended at disproportionately high rates...

San Francisco, CA
Black students are **11.2** times and Latino students are **2.7** times more likely than White students to be suspended.

Springfield, MA
Black students are **1.5** times and Latino students are **1.2** times more likely than White students to be suspended.



Los Angeles, CA
Black students are **3.5** times and Latino students are **1.5** times more likely than White students to be suspended.

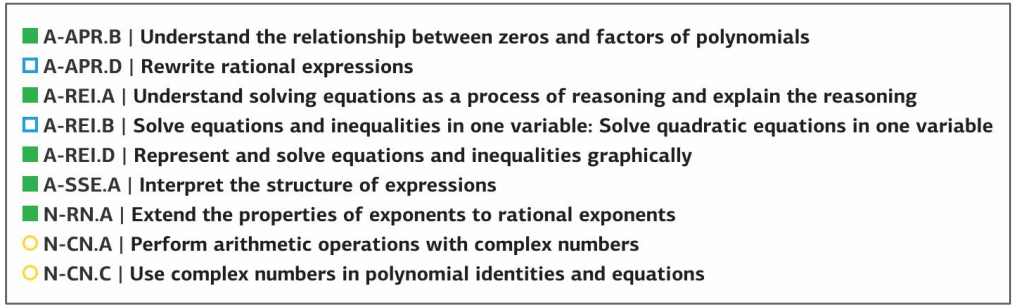
Kansas City, MO
Black students are **1.7** times and Latino students are **.52** times more likely than White students to be suspended.

Shelby County, TN
Black students are **7.1** times and Latino students are **2** times more likely than White students to be suspended.

Source: The Civil Rights Project (2016).

...and are enrolled in high-level math and science courses at disproportionately low rates

About ¼ of high schools that serve the highest percentage of Black and Latino students do not offer Algebra II, even though Algebra II usually required for college-level courses in math and science.



Source: U.S. Department of Education Office for Civil Rights (2016).

We have to do this work because our racial makeup does not reflect that of our students

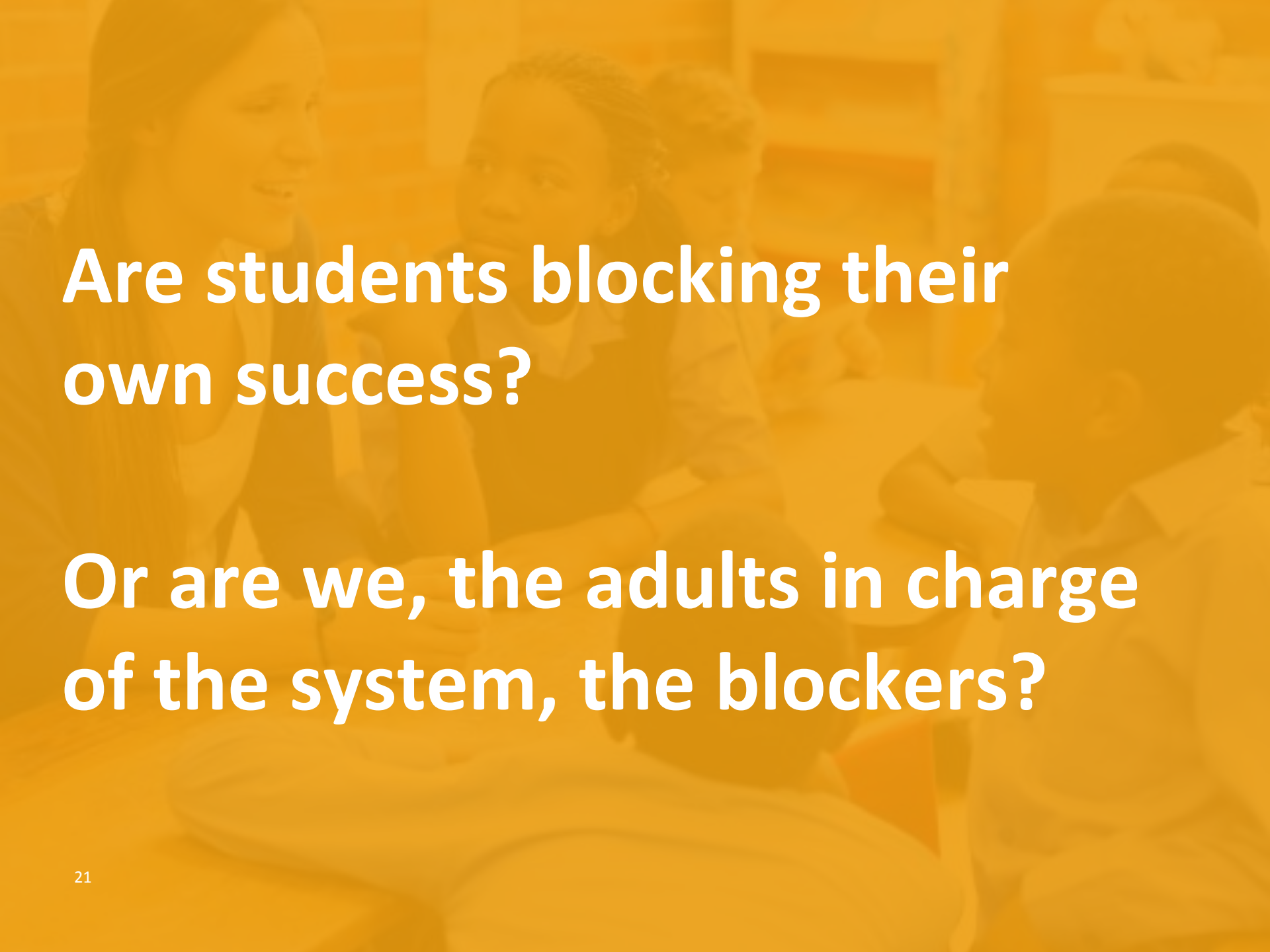
of public school students are students of color

of public school teachers are white

Source: National Center for Education Statistics (2013, 2017).

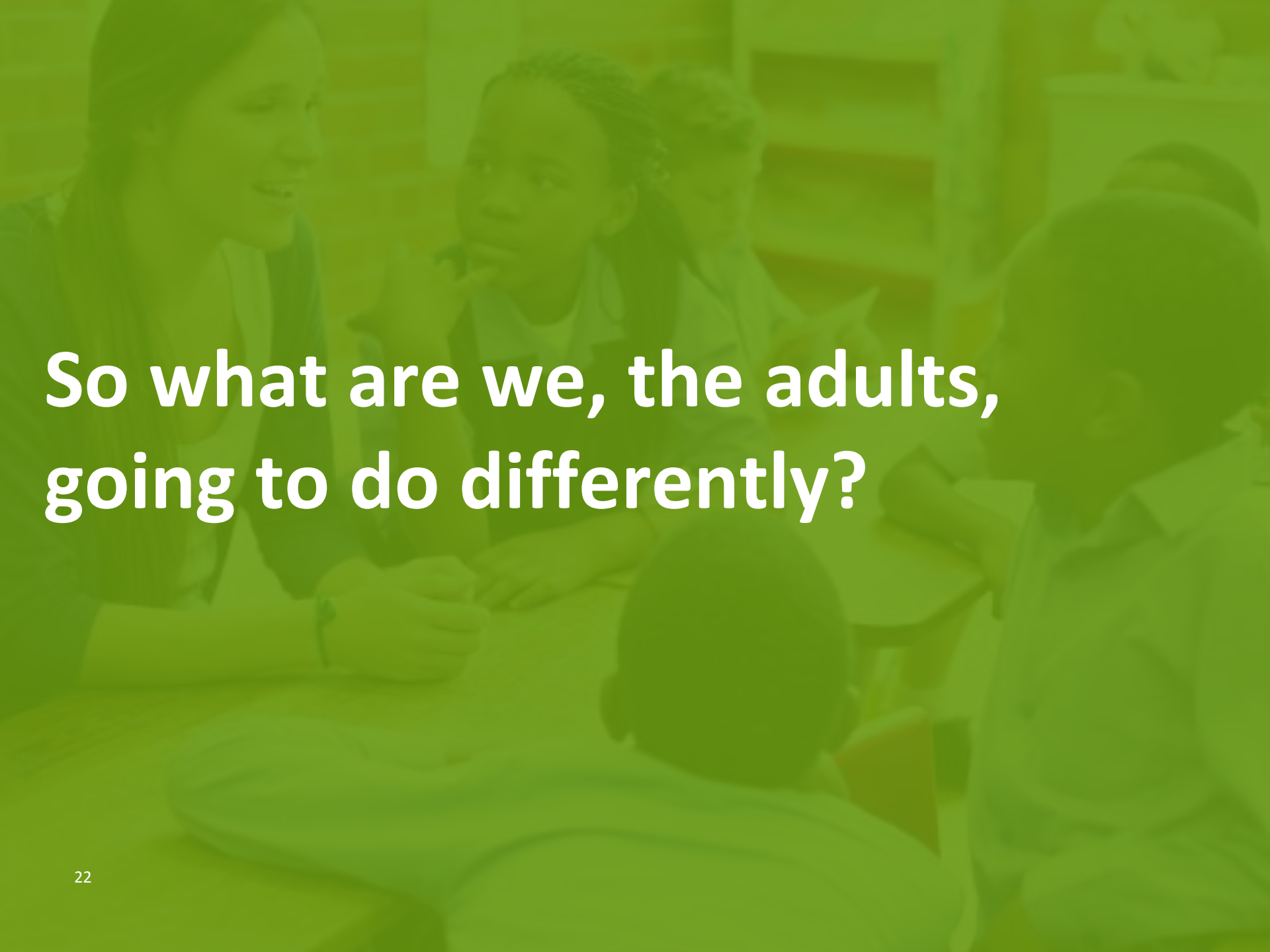
We Must Change our Perspective

From...	To...
• What "they" can't do • "Their" gaps in knowledge • Expecting the same	• What "we" haven't done • "Our" gaps in knowledge • Expecting something different



Are students blocking their own success?

Or are we, the adults in charge of the system, the blockers?



So what are we, the adults, going to do differently?

We'd like to share some lessons learned in trying to do these two things:

1. Supporting teachers in adopting standards-aligned materials and giving all kids an opportunity to engage with them
2. Building teacher capacity in their knowledge of standards and ability to confront systemic racism and bias

What We've Learned

A. Working with Aligned Materials

What are the challenges?

Lesson 3: Equivalent Ratios

Student Outcomes

- Students develop an intuitive understanding of equivalent ratios by using tape diagrams to explore possible quantities of each part when given the part-to-part ratio. Students use tape diagrams to solve problems when the part-to-part ratio is given and the value of one of the quantities is given.
- Students formalize a definition of equivalent ratios: Two ratios, $A: B$ and $C: D$, are equivalent ratios if there is a nonzero number c such that $C = cA$ and $D = cB$.

Classwork

Exercise 1 (5 minutes)

This exercise continues to reinforce students' ability to relate ratios to the real world, as practiced in Lessons 1 and 2. Provide students with time to think of a one-sentence story problem about a ratio.

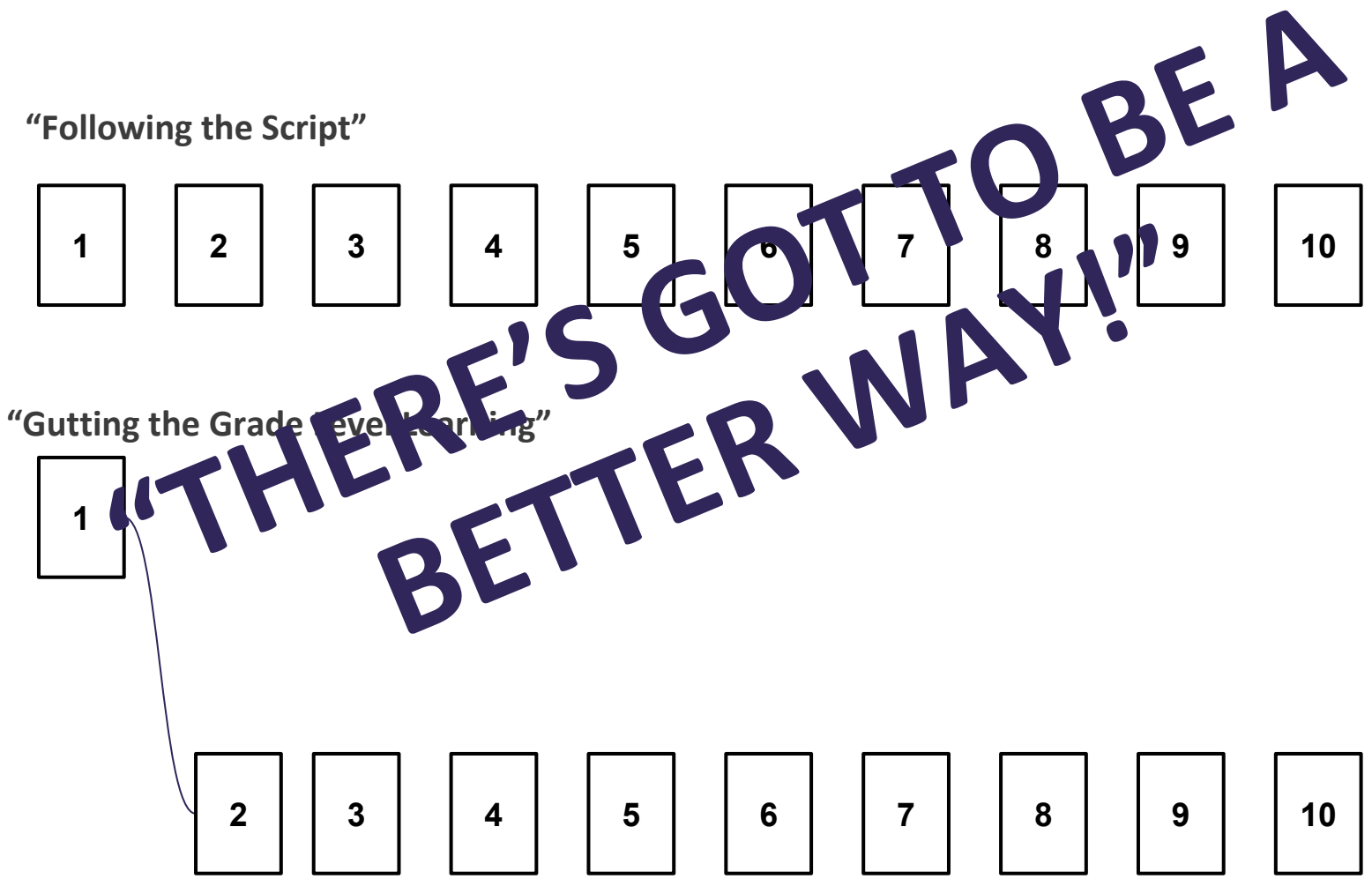
Exercise 1

Write a one-sentence story problem about a ratio.

Answers will vary. The ratio of the number of sunny days to the number of cloudy days in this town is 3: 1.

Write the ratio in two different forms.

Two Patterns of Behavior We've Seen



What do adept teachers do with ENY?

1. ??????????????????????????

2. ??????????????????????????

We learned…

The original EngageNY lessons do not provide the necessary clarity for teachers to immediately understand the grade-level focus of the lesson.

As a result, teachers themselves must undertake the time-consuming and complex work of distilling the lesson objective and evaluating the suitability of the activities.

We learned…

It took adept teachers multiple hours to perform this process effectively for a single lesson.

Typical teachers also attempt adaptation in the same way but were less likely to correctly identify the lesson objective, select appropriate activities, or make adaptations without sacrificing rigor.

So we thought:

How can we make working with an aligned set of materials:

(a) less **time-consuming** and

(b) more likely to focus on **the depth of grade-level mathematics for all students** when implemented in the classroom?

Original ENY Lesson

Lesson 2: Real-World Positive and Negative Numbers and Zero

Student Outcomes

- Students use positive and negative numbers to indicate a change (gain or loss) in elevation with a fixed reference point, temperature, and the balance in a bank account.
- Students use vocabulary precisely when describing and representing situations involving integers; e.g., an elevation of -10 feet is the same as 10 feet below the fixed reference point.
- Students choose an appropriate scale for the number line when given a set of positive and negative numbers to graph.

Classwork

Opening Exercise (5 minutes)

Display a number line without a scale labeled. Pose the following questions to the whole group, and allow students three minutes to discuss their responses in pairs. Record feedback by labeling and relabeling the number line based on different responses.

Discuss the following:

- Explain how you would show 150 on a number line.
  - *I would start at zero and move to the right* 150 *units.*
- What strategy would you use to number the number line in order to show 150?

Scaffolding:

For kinesthetic learners, provide students with whiteboards and markers to create their number lines. Ask them to hold up their boards, and select a few students to explain their diagrams to the class.

Streamlined Lesson

LESSON 2

Real-World Positive and Negative Numbers and Zero

Objective

At the close of the lesson, students can represent real-world situations (e.g. involving bank account transactions and temperatures above/below 0 degrees) as integers.

To reach this goal, students will...

STEP 1	**Identify and define key vocabulary**		
ESSENTIAL	Activity 1: Banking vocabulary graphic organizer	6.NS.C.5	10 min
> SUPPORT	Three reads of the banking situation		3 min
STEP 2	**Interpret contextual details to write and plot integers**		
ESSENTIAL	Activity 2: Banking activity on a number line	6.NS.C.5 , 6.NS.C.6.C	10 min
> SUPPORT	Review scale and starting point	4.MD.A.2	5 min
> SUPPORT	Critique, Correct, Clarify		1 min
STEP 3	**Represent real-world situations as integers**		
ESSENTIAL	Activity 3: Temperatures on a vertical number line	6.NS.C.5	5 min
SUPPLEMENTAL	Activity 4: Banking and temperature situations	6.NS.C.5	5 min
CHALLENGE	Activity 5: A situation involving a negative integer and zero	6.NS.C.5	2 min

Take a Closer Look

https://tinyurl.com/UBStreamlined

1. What differences do you notice?
2. What is the connection to equity?

Teacher validation research

Overwhelmingly, educators, both adept and novice, found the UnboundEd version to be far superior in clarity compared to the original EngageNY version

Results

15 out of 15 teachers say that it is "easy" or "very easy" for them to understand the most important student learnings in the UnboundEd version.

15 out of 15 agree that the UnboundEd version is easier for a new teacher to plan with.

14 out of 15 indicate that they would choose the UnboundEd version over the EngageNY version.

15 out of 15 agree that the UnboundEd version is clean, organized, and simple.

"It's a really big jump. Like, I get it now. THIS is what curriculum should look like. It made me re-interested and excited to use it... I mean.. I can actually do this!"

"This type of curriculum could be utilized by teachers who are just starting out to the teachers who have been in the classroom for 10+ years."

Quick Reflection

Stop and Jot: What's one way you could take this streamlining process back to your role?

Final Thought on Materials

1. Who is given opportunities to engage in **grade level mathematics?**
2. Who is assumed only to be able to access **mathematics from prior grades?**
3. Who is given opportunities to **develop conceptual understanding?**
4. Who is limited to **performing procedures?**

What We've Learned

B. Building Capacity & Impacting Beliefs

Let's Do Some Math

Application Task #1

A 6th grade math teacher can grade 25 homework assignments in 20 minutes. Is he working at a faster rate or slower rate than grading 36 homework assignments in 30 minutes?

Application

6.RP.A.3b

Solve unit rate problems including those involving unit pricing and constant speed. *For example, if it took 7 hours to mow 4 lawns, then at that rate, how many lawns could be mowed in 35 hours? At what rate were lawns being mowed?*

1. Do the math for each task.
2. Identify the language/wording of the task that emphasizes application.
3. Determine the standard(s) aligned with each task, and identify the language of the standard(s) that calls for application..
4. Identify how the task aligns to the standard.

How is attending to a balance of rigor in your instruction an equitable practice for all students?

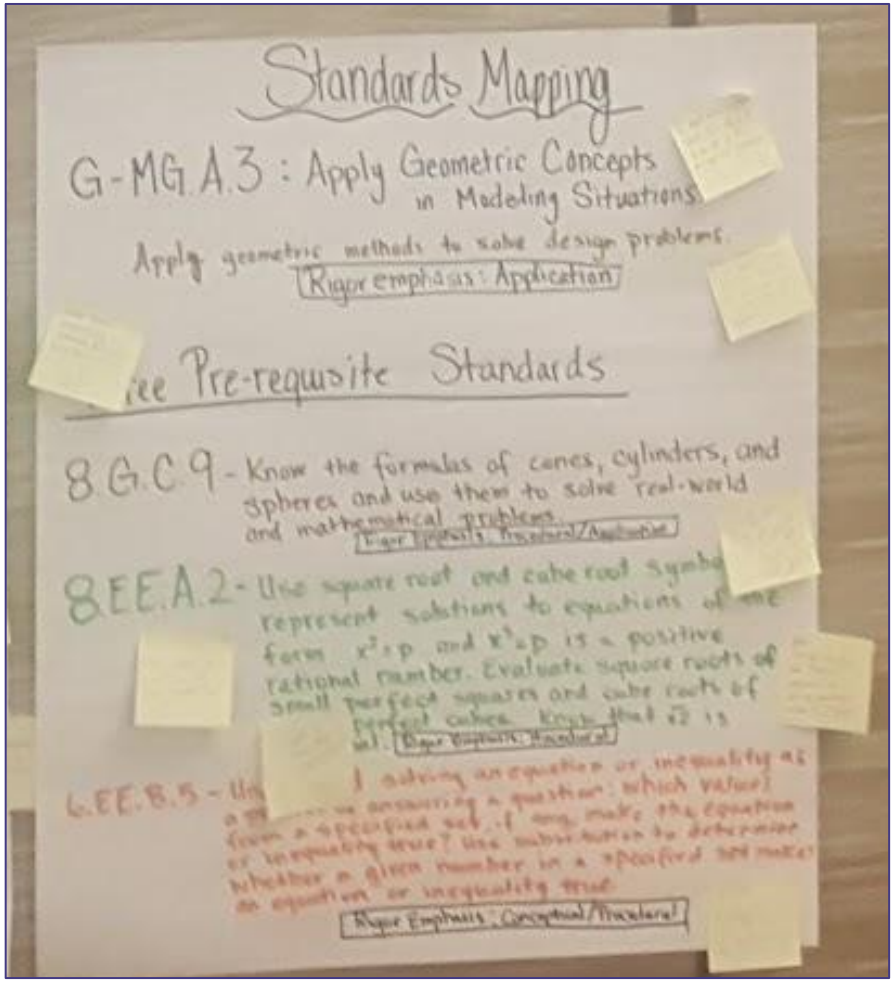
Content Based PD

- Experiences must be grounded in standards and aligned curriculum.
- Teachers must engage in mathematical tasks.
- Experiences must address real challenges: unfinished learning and likely misconceptions.
- Teachers should leave with less work than they entered with.

Activity: Close Reading

Teachers read the standards for an upcoming lesson/unit and:

- Underline key vocabulary
- Highlight language indicating rigor
- Draw connections to other standards



What's Your ID?

Write on each card a word or phrase that describes a dimension of yourself

What's Your ID?

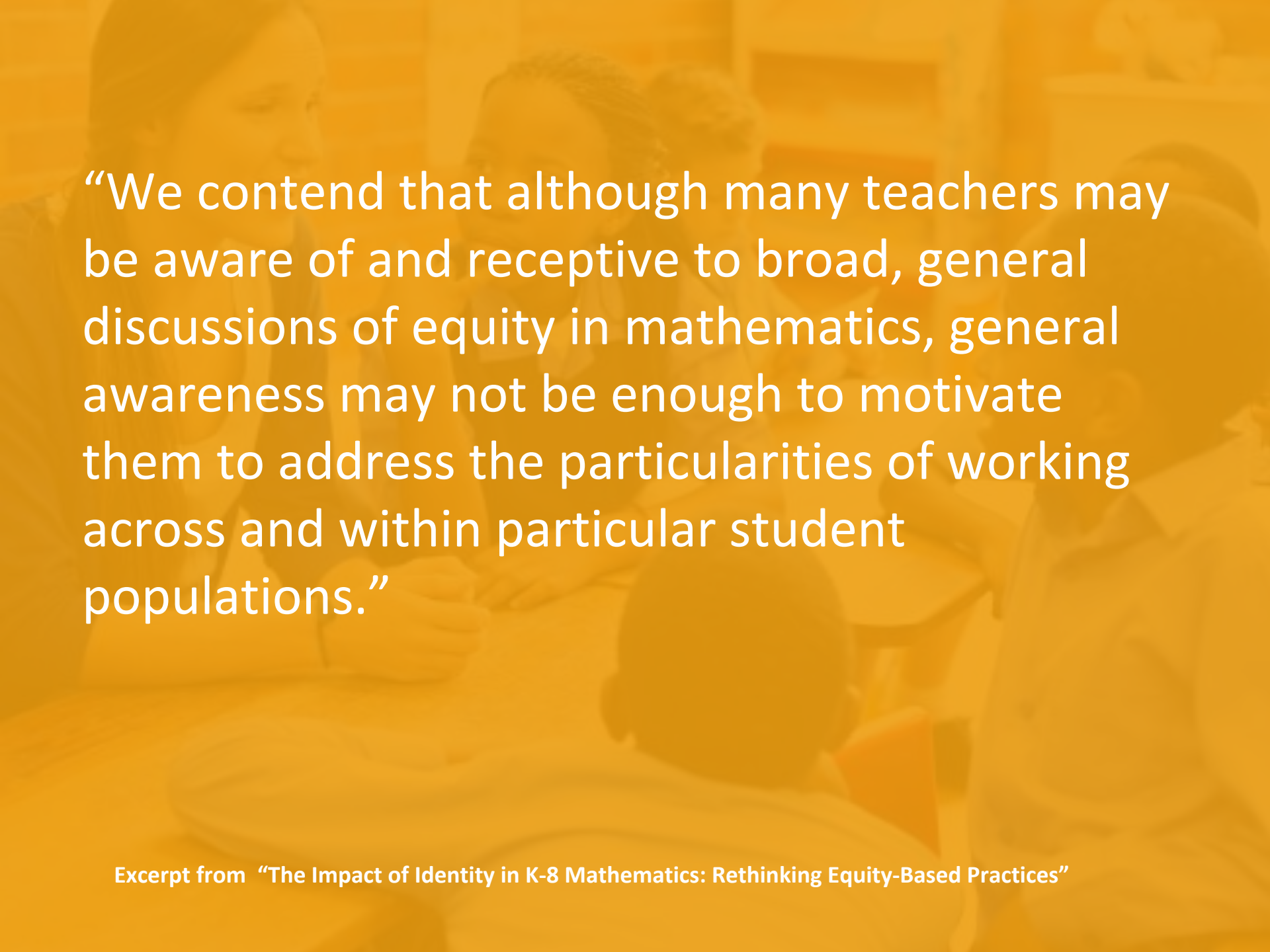
Think about a challenging student.

What identities would they record on cards, and which would they hold on to or discard?

How could this information positively or negatively impact the teachers' interactions with students?

Impact of Teachers' Math Identity

Math Identity	Math Teacher Identity	Instructional Decisions	Student Math Identity
Teachers' math learning experiences shaped teacher math identity	Teacher math identity shapes their identity as a teacher of math.	Identity as a teacher of math influences the hundreds of daily micro-decisions.	Teacher instructional decisions influences student math identity



"We contend that although many teachers may be aware of and receptive to broad, general discussions of equity in mathematics, general awareness may not be enough to motivate them to address the particularities of working across and within particular student populations."

Excerpt from "The Impact of Identity in K-8 Mathematics: Rethinking Equity-Based Practices"

Technical Change

Materials

Policies

Protocols

Structures

Systems

Timelines

Adaptive Change

Assumptions

Attachments

Beliefs

Feelings

Habits

Rituals

Tolerating discomfort

Tolerating fear

Tolerating shame

The Intersection

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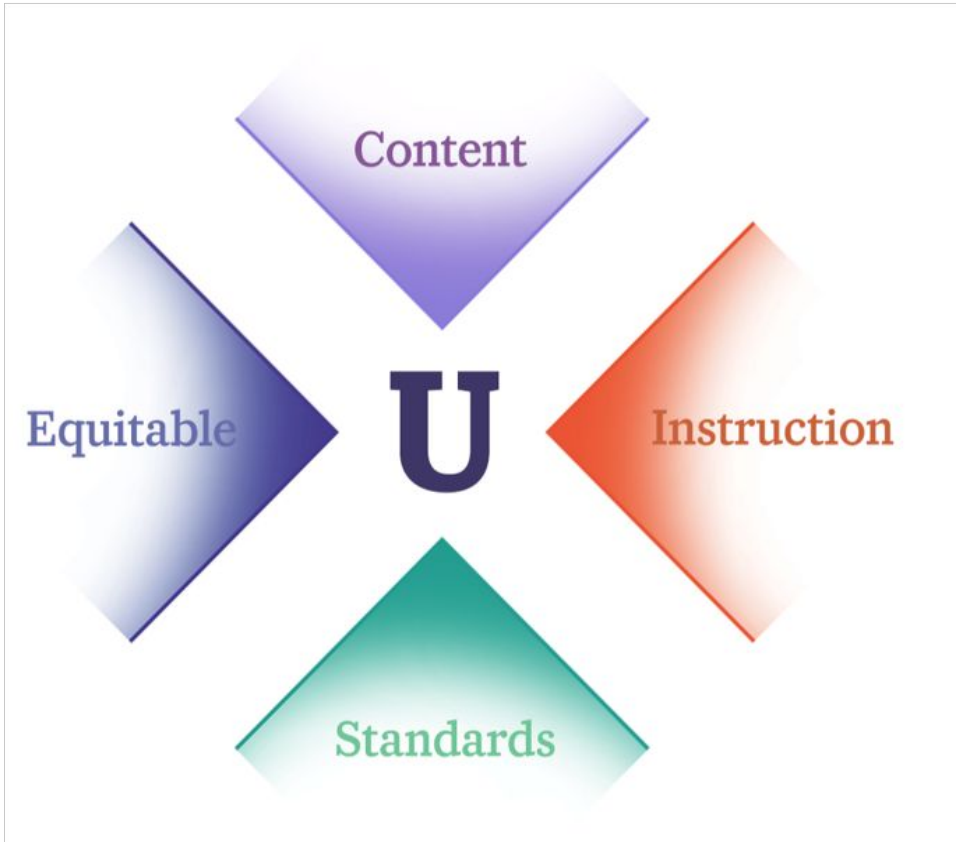
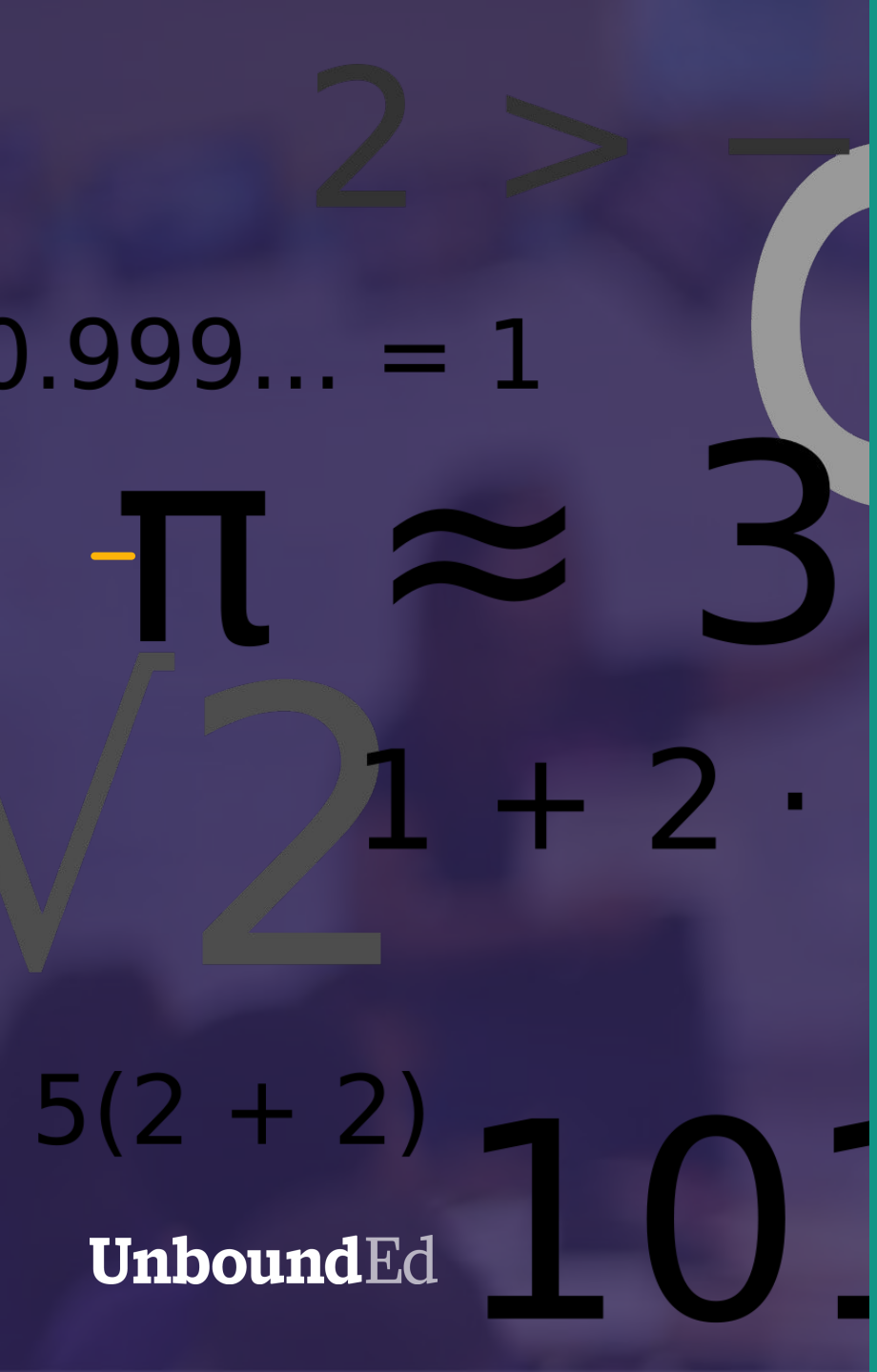
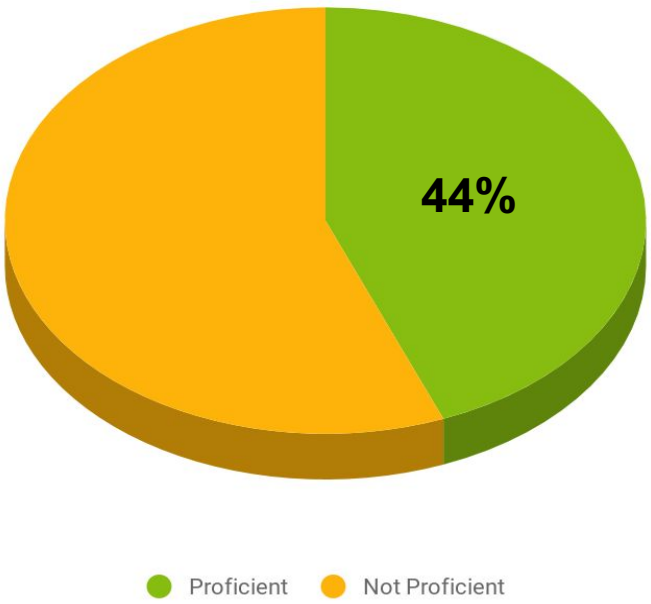




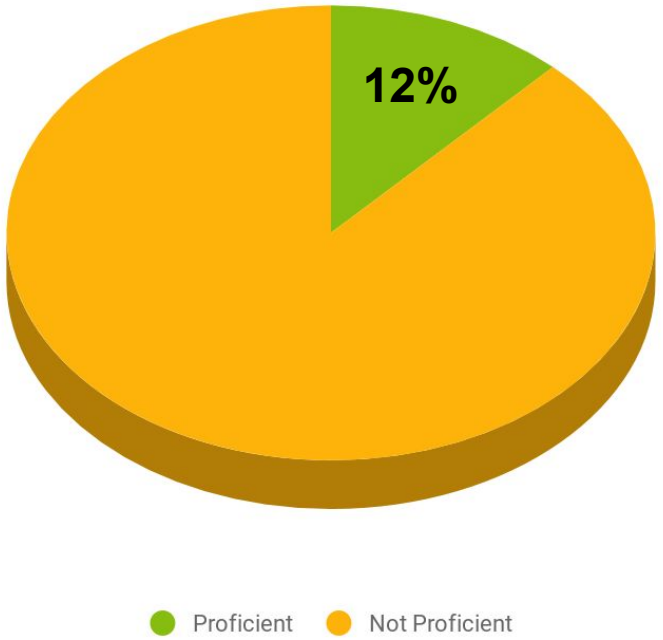
African-American Male Math Achievement Toolkit

8th Grade NAEP Proficiency

White Males



African American Males



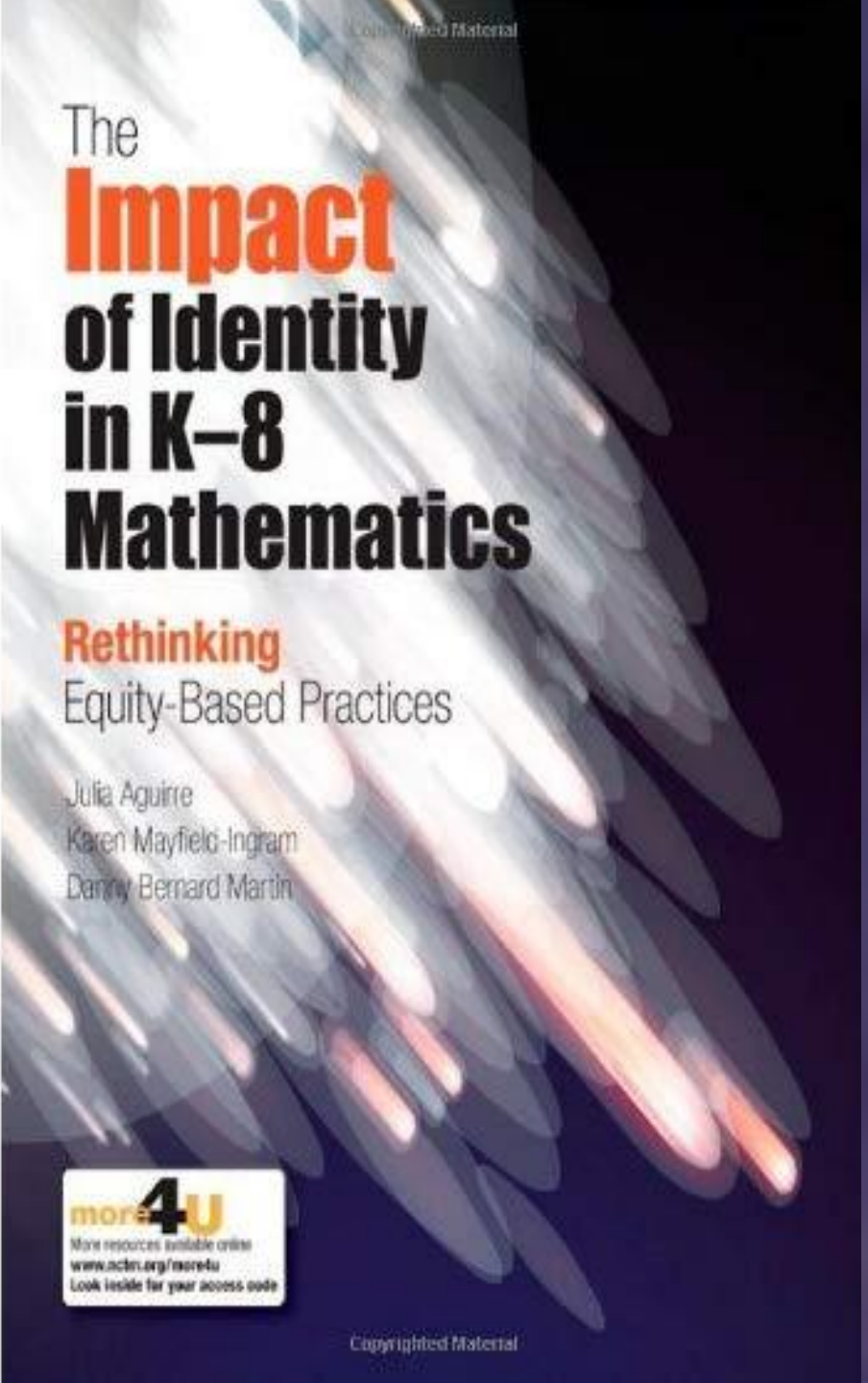
Source: National Center for Education Statistics, 2016

The Toolkit

- Bridges the gap between research and the front lines
- Turnkey PD and coaching support material for instructional support personnel
- Used in conjunction with high quality materials

The Plan:

- Professional Development
  - Bias
  - Math Identity
  - Equity-Based Practices
- Targeted Observations
- Coaching & Reflection



Five Equity-Based Practices in Mathematics Classroom

- Going deep with mathematics
- Leveraging multiple mathematical competencies
- Affirming mathematics learners' identities
- Challenging spaces of marginality
- Drawing on multiple resources of knowledge

Desired Outcomes:

Instructional coaches teacher support will be grounded equity -based practices.

Teacher practice will grounded in research-based math identity and equity practices.

Improved student outcomes

Take a Closer Look

https://tinyurl.com/UBIPG

1. What differences do you notice?
2. What is the connection to equity?

Instructional Practice Guide

CORE ACTION 3: Provide all students with opportunities to exhibit mathematical practices while engaging with the content of the lesson.[4]

INDICATORS[5 6] / NOTE EVIDENCE OBSERVED OR GATHERED FOR EACH INDICATOR / RATING

4- Teacher provides many opportunities, and most students take them.
3- Teacher provides many opportunities, and some students take them; or teacher provides some opportunities and most students take them.
2- Teacher provides some opportunities, and some students take them.
1- Teacher provides few or no opportunities, or few or very few students take the opportunities provided.

A. The **teacher** provides opportunities for all students to work with and practice grade-level problems and exercises. **Students** work with and practice grade-level problems and exercises.	4 3 2 1 ☐ NOT OBSERVED
B. The **teacher** cultivates reasoning and problem solving by allowing students to productively struggle. **Students** persevere in solving problems in the face of difficulty.	4 3 2 1 ☐ NOT OBSERVED
C. The **teacher** poses questions and problems that prompt students to explain their thinking about the content of the lesson. **Students** share their thinking about the content of the lesson beyond just stating answers.	4 3 2 1 ☐ NOT OBSERVED
D. The **teacher** creates the conditions for student conversations where students are encouraged to talk about each other's thinking. **Students** talk and ask questions about each other's thinking, in order to clarify or improve their own mathematical understanding.	4 3 2 1 ☐ NOT OBSERVED
E. The **teacher** connects and develops students' informal language and mathematical ideas to precise mathematical language and ideas. **Students** use increasingly precise mathematical language and ideas.	4 3 2 1 ☐ NOT OBSERVED

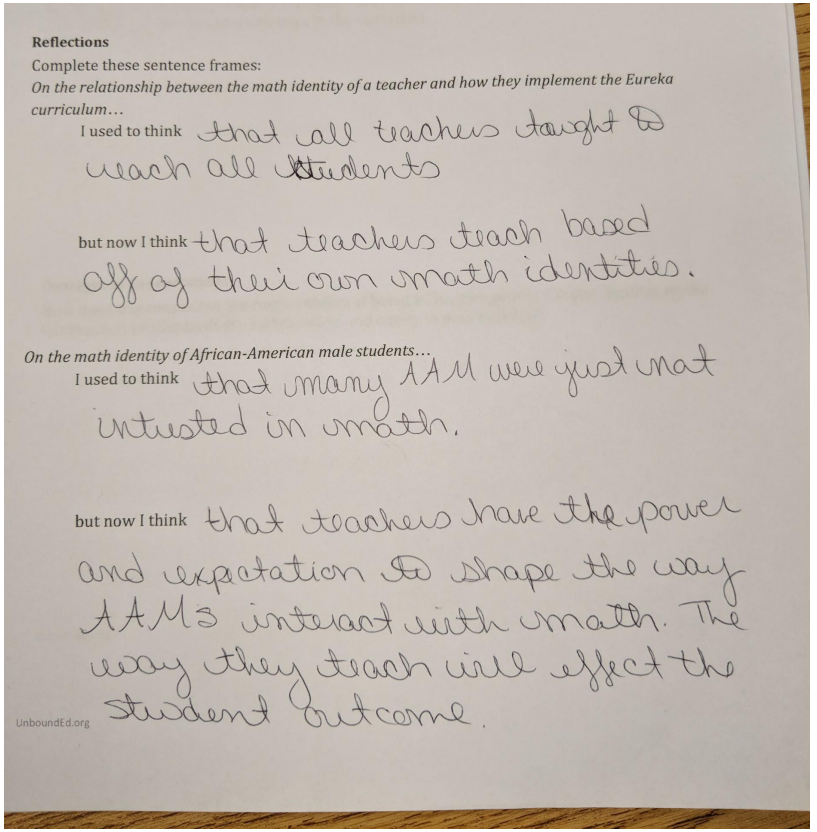
If any uncorrected mathematical errors are made during the context of the lesson (instruction, materials, or classroom displays), note them here.

Learning Walkthroughs

Core Action 3: Provide all students with opportunities to exhibit mathematical practices while engaging with the content of the lesson		**Core Action 3 Reflection Questions**
A. The **teacher** provides opportunities for all students to work with and practice grade-level problems and exercises. **Students** work with and practice grade-level problems and exercises.	**4- Teacher provides many opportunities (i.e presents tasks that offer multiple entry points, allowing students with varying skills, knowledge and levels of confidence to engage with the problem and make valuable contributions) , and most students take them.** **3- Teacher provides many opportunities, and some students take them; or teacher provides some opportunities and most students take them.** **2- Teacher provides some opportunities, and some students take them.** **1- Teacher provides few or no opportunities, or few or very few students take the opportunities provided.**	**Going deep with mathematics** *Who (teacher, a few students, most students, all students) does most of the mathematical analysis in the lesson?* *Which questions or tasks elicit thinking from the greatest number of students?* *What are the features of those questions or tasks?* *Do all students have access to high-quality grade level standards-aligned tasks? If not, why? Is there a pattern for who consistently do not receive access to grade level tasks? Why?* **Leveraging multiple mathematical competencies** *How did the teacher identify and support mathematical contributions from students with different strengths and levels of confidence?* **Affirming mathematics learners' identities** *For which students are teacher interactions structured to promote persistence with complex math problems?*
B. The **teacher** cultivates reasoning and problem solving by allowing students to productively struggle. **Students** persevere in solving problems in the face of difficulty.	**4- Teacher provides many opportunities, and most students take them.** **3- Teacher provides many opportunities, and some students take them; or teacher provides some opportunities and most students take them.** **2- Teacher provides some opportunities, and some students take them.** **1- Teacher provides few or no opportunities, or few or very few students take the opportunities provided.**	
C. The **teacher** poses questions and problems that prompt students to explain their thinking about the content of the lesson. **Students** share their thinking about the content of the lesson beyond just stating answers.	**4- Teacher provides many opportunities for students to see themselves as confident problem solvers who can make valuable mathematical contributions, and most students take them.** **3- Teacher provides many opportunities, and some students take them; or teacher provides some opportunities and most students take them.** **2- Teacher provides some opportunities, and some students take them.** **1- Teacher provides few or no opportunities, or few or very few students take the opportunities provided.**	

Interim Feedback Indicates

- A shared understanding of what equitable instruction looks like is being established
- Attention is being paid to the beliefs that drive teacher micro-decisions
- Participants are becoming more reflective of their own practices



Reflections

Complete these sentence frames:

On the relationship between the math identity of a teacher and how they implement the Eureka curriculum…

I used to think that all teachers taught to reach all students

but now I think that teachers teach based off of their own math identities.

On the math identity of African-American male students…

I used to think that many AAM were just not intrested in math.

but now I think that teachers have the power and expectation to shape the way AAMs interact with math. The way they teach will effect the student outcome.

UnboundEd.org

Quick Reflection

Stop and Jot: What's one thing that you can do to build capicty and beliefs when you return to get back?

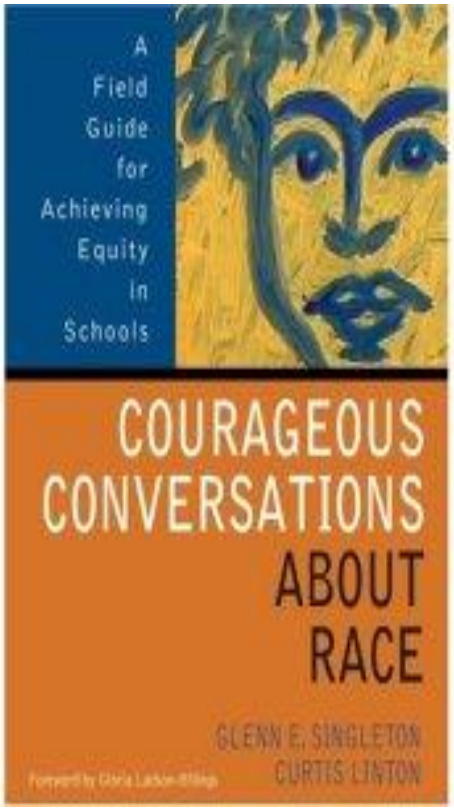
Closing Reflections

Recap: We need to...

1. Support teachers in adopting standards-aligned materials and giving all kids an opportunity to engage with them
2. Build teacher capacity in their knowledge of standards and ability to confront systemic racism and bias


So, now what?

Four Agreements for Courageous Conversations



- *We must stay engaged.*
- *We must speak our truth (*with Mercy*).*
- *We must experience discomfort.*
- *We must expect and accept that we will not reach closure.*

Bias Toolkit @ UnboundEd.org

UNBOUNDED TOOLKIT

4.5-6h

Disrupting Inequity: Having Brave Conversations About Bias

The toolkit contains a high-level overview of the facilitated conversation, with individual PowerPoint presentations and materials containing detailed notes, resources, and activities that will help you move through each part of the conversation. Educators are encouraged to modify these presentations so they work for your school community.


JUSTICE IS IN THE DETAILS
SUM '19
Los Angeles
July 8-12
Standards INSTITUTE
standardsinstitutes.org/attend-institute

QUESTIONS?

Thank You!

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