



# Ethnomathematics

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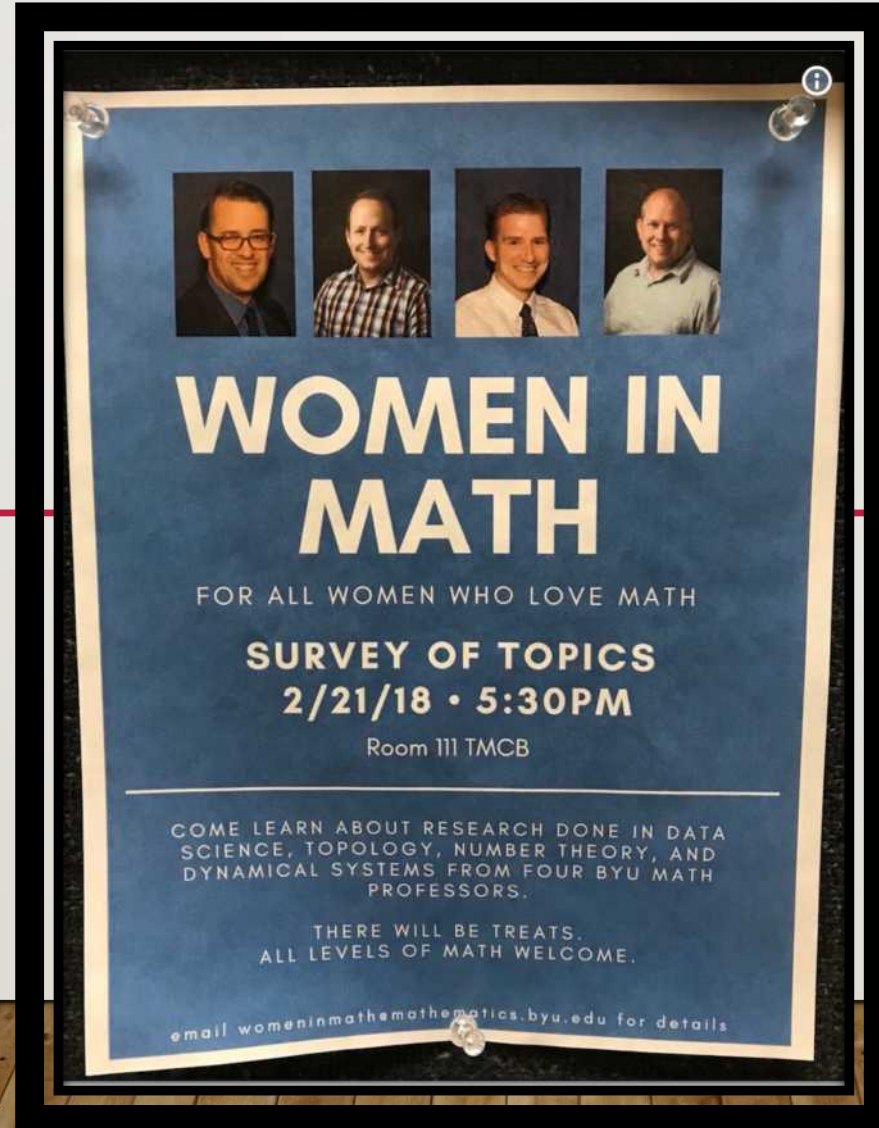
**Unlocking the  
Gates to College  
& Careers in the  
21<sup>st</sup> Century**

# COMBINING LIKE TERMS

WHAT I NOTICE?



What is one positive or challenging thing you **notice** about this flyer?



WHAT I WONDER?



What is one positive or challenging thing you **wonder** about this flyer?

# OVERVIEW/WHOLE GAME APPROACH

- Combing Like Terms
- Overview/Whole Game Approach
- Defining Equity to Make the SHIFTS
- Ethnomathematics
- Equity Below the Neck
- Equity Above the Neck
- Closure

# WEBINAR NORMS: **FOUR AGREEMENTS**

- Speak Your Truth
- Stay Engaged
- Experience Discomfort
- Expect and Accept Non-Closure

Glenn Singleton, “Courageous Conversations”



A 3D black box is shown at an angle, appearing to float above a wooden floor. The front face of the box is white and contains the text "Defining Equity to Make the SHIFTS". The text is centered and slightly tilted to match the perspective of the box. The word "SHIFTS" is in a larger, bold, red font, while the rest of the text is in a black font.

Defining Equity  
to Make the  
**SHIFTS**

# DEFINING EQUITY... IN EDUCATION

The educational policies, practices, and programs necessary to:

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- (a) eliminate educational barriers based on gender, race/ethnicity, national origin, color, disability, age, or other protected group status; and
- (b) provide equal educational opportunities and ensure that historically underserved or underrepresented populations meet the same rigorous standards for academic performance expected of all children and youth.



# Ethnomathematics

“Do you have enough ETHNO in your mathematics?”

# Ethnomathematics

Ethnomathematics is used to express the relationship between culture and mathematics.

Much of today's curriculum is so disconnected from the child's reality that it is impossible for the child to be a full participant in it. The mathematics in many classrooms has practically nothing to do with the world that the children are experiencing.



# SHIFT TO ONLINE MATH EQUITY

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## I. Focus:

a) Less is More and More is Less.

**b) 80/20 Rule**

## 2. Coherence:

a) Shift in School Schedules

b) Communication and Coordination between teachers.

c) *“What are you doing? Here’s what I’m doing. What comes next?”*

## 3. Rigor: (stands on the shoulders of engagement)

a) *pursue conceptual understanding (teacher education & collaboration)*

b) *procedural skills and fluency,*

c) *application and word problems (address the fear)*

# SHIFT TO ONLINE MATH EQUITY

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## 1. Focus:

- a) Less is More and More is Less.
- b) 80/20 Rule

## 2. Coherence:

- a) Shift in School Schedules**
- b) Communication and Coordination between teachers.
- c) *“What are you doing? Here’s what I’m doing. What comes next?”*

# SHIFT TO ONLINE MATH EQUITY

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1. Focus:

2. Coherence:

**3. Rigor: (stands on the shoulders of engagement)**

a) *pursue conceptual understanding* (**the elephant in the room**)

b) *procedural skills and fluency,*

c) *application and word problems* (**address the fear**)

# Why the Major Shifts In Math

## *FORTUNE 500 MOST VALUED SKILLS: THEN AND NOW*

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- Writing
- Computation Skills
- Reading Skills
- Oral Communication
- Listening Skills
- Creative Thinking
- Leadership



- Teamwork
- Problem-solving
- Emotional Intelligence
- Oral Communication
- Listening Skills
- Creativity
- Leadership

# THE 3 MAJOR SHIFTS IN MATH: **DISCUSSION**

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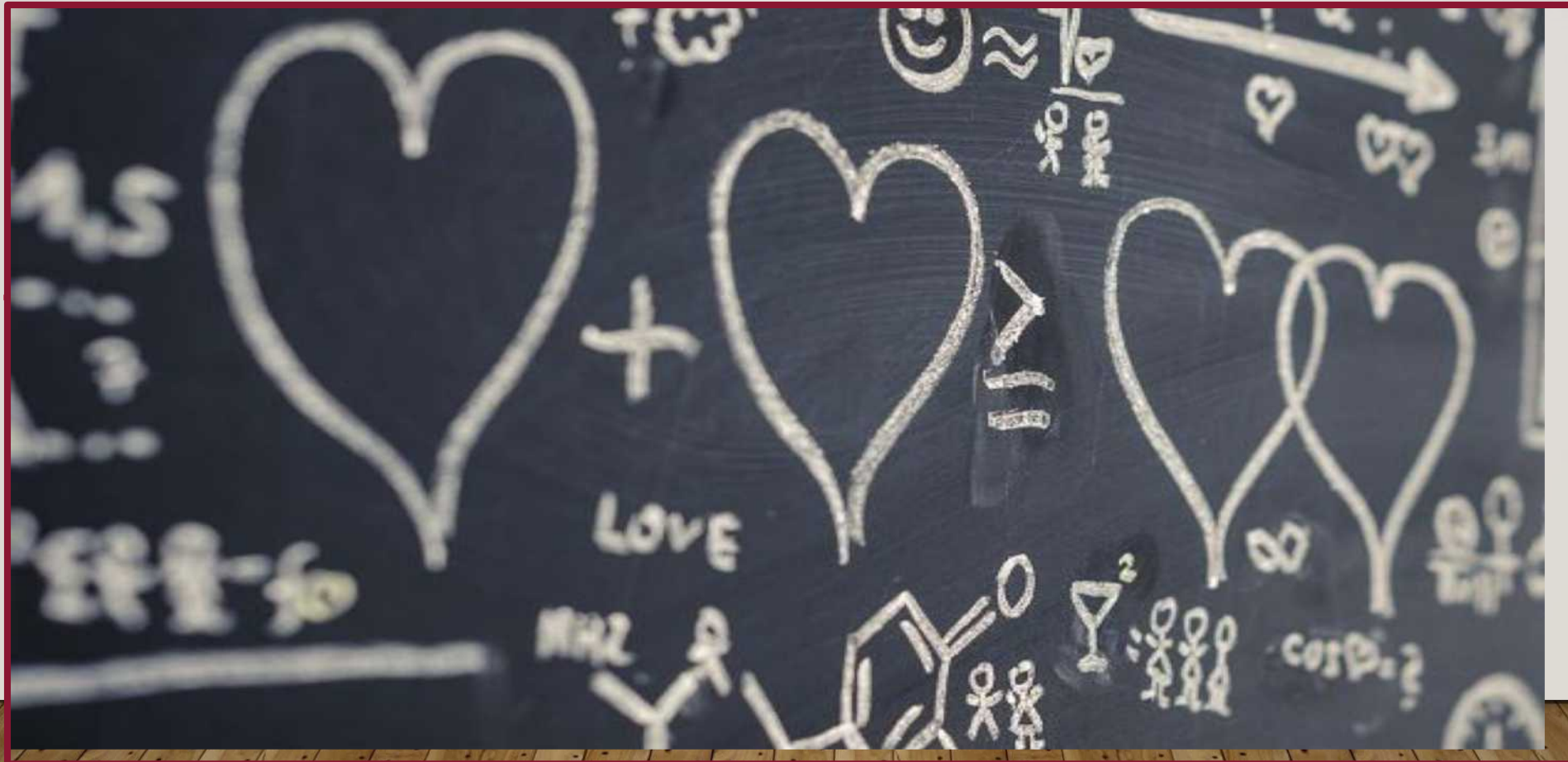
*Which shift do you find most challenging to implement?  
Why?*

- 1. Focus**
- 2. Coherence**
- 3. Rigor**

Equity  
Below the Neck



# MATH IS EMOTIONAL



# MATH IS EMOTIONAL

*“WE ARE NOT HUMAN BEINGS HAVING AN EMOTIONAL EXPERIENCE.  
WE ARE EMOTIONAL BEINGS HAVING A HUMAN EXPERIENCE.”*

- ❖ **How you feel = how you learn**
- ❖ **People don't hate math, they hate math teachers**
- ❖ **Don't just design the lesson, design the learning EXPERIENCES**



# PILLARS THAT SUPPORT 21<sup>ST</sup> CENTURY MATH INSTRUCTION

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**Cultural  
Competence**

**Growth  
Mindset**

**Social  
Emotional  
Learning**

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**Mathematical Standards**

**Mathematical Practices**

# PILLARS THAT SUPPORT 21<sup>ST</sup> CENTURY MATH INSTRUCTION

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## Cultural Competence

Mathematical Standards

- First identify which **cultural archetypes** dominate the classroom: individualism or collectivism
- **Ethnomathematics**: the study of the relationship between mathematics and culture
- **Interview students** to learn how to integrate their lived experience into your instruction.

**“POVERTY IS NOT A CULTURE.”**

-Zaretta Hammond

# PILLARS THAT SUPPORT 21<sup>ST</sup> CENTURY MATH INSTRUCTION

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## Growth Mindset

- If you can't change your mind, **change your language**
- Core beliefs are always expressed through **pedagogy**
- Failure and mistakes are the bricks for building math skill; **'YET'** is the mortar that holds them together.

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### Mathematical Practices

***“POVERTY IS NOT A LEARNING DISABILITY.”***

-Dr. Pedro Noguera

# PILLARS THAT SUPPORT 21<sup>ST</sup> CENTURY MATH INSTRUCTION

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## Social Emotional Learning

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### Mathematical Practices

- **Emotions** open or close the brain's ability to learn and process information
- The **amygdala** checks the **environment** or social, emotional, intellectual safety
- Where the **Standards for Mathematical Practice** are rooted.

# Maslow's Hierarchy of Needs



Teacher

Student

School

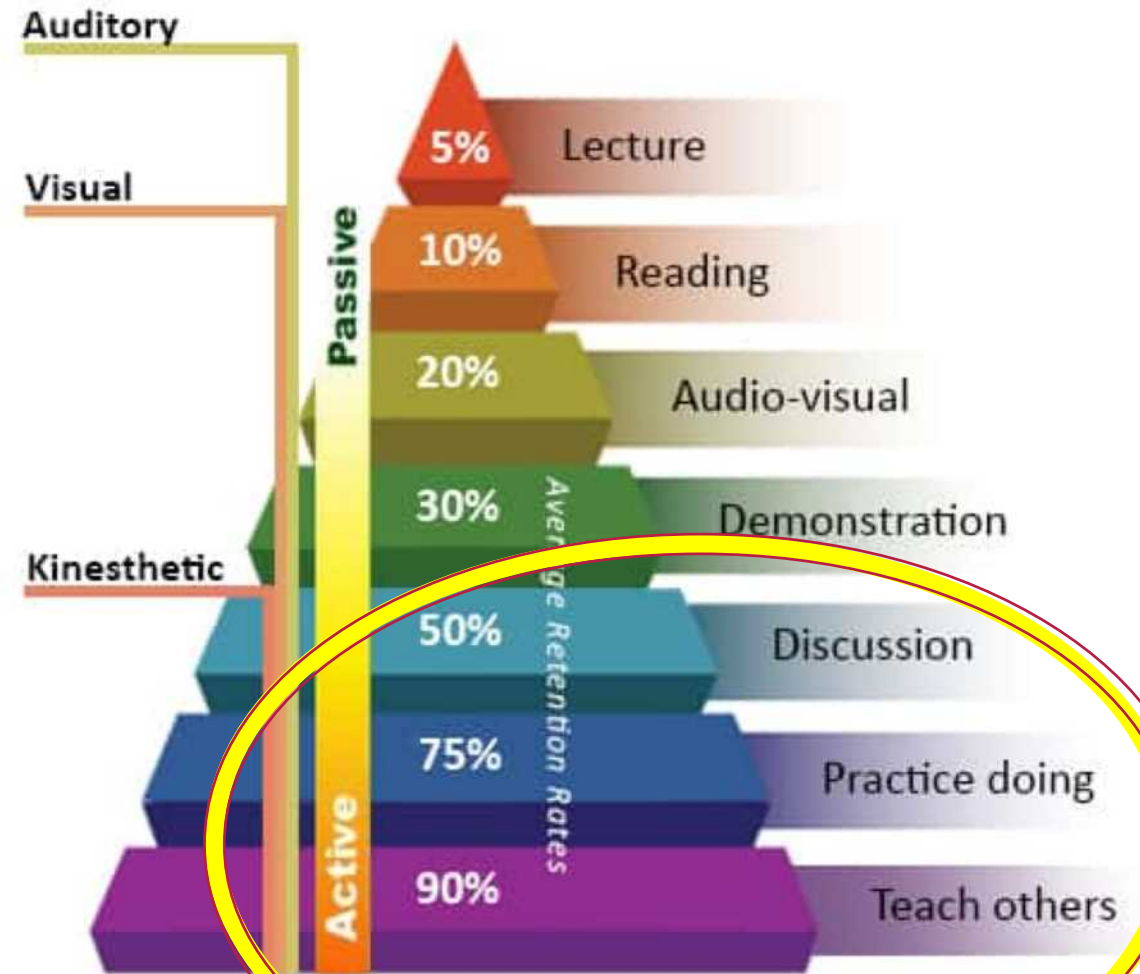
Family/Community

Equity  
Above the Neck



# HOW TO INCREASE STUDENT LEARNING

- ✓ INCREASE STUDENT TALK
- ✓ INCREASE STUDENT COLLABORATION
- ✓ FAIL FAST, AND FAIL OFTEN



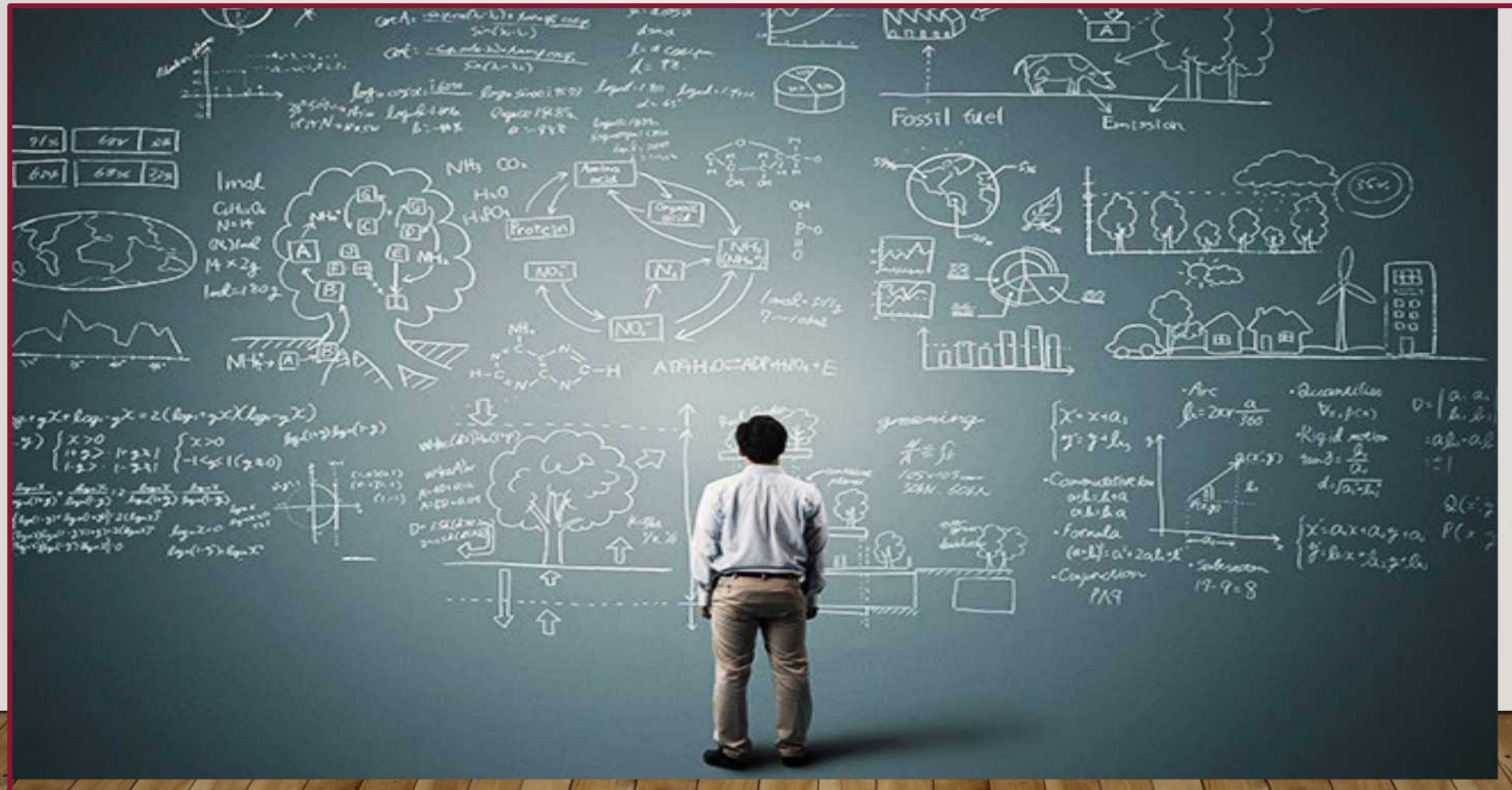
# STUDENT TESTIMONIALS

- **Ethnomathematics:**
- Interactive Learning
- Culturally Affirming Environment
- Making Math Competitive





# FINAL WORDS AND TAKEAWAYS



THANK YOU FOR ATTENDING!!



**Ethnomathematics:**

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