



# The Task at Hand



## Creating and Implementing Common-Core Tasks

By: Liem Tran and Nate Goza

# Park City, Utah (circa 2013)

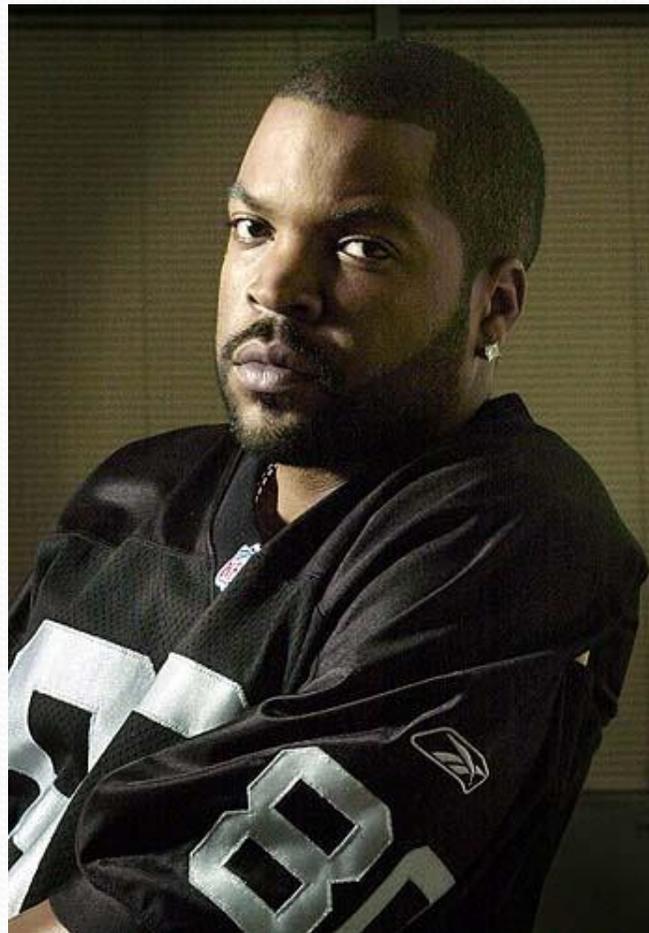


# Nate Goza & Liem Tran



- Attended UCLA for Undergraduate and Graduate School
- Teachers at Orthopaedic Hospital Medical Magnet High School in the Los Angeles Unified School District.
- National Board Certified
- Master Teacher Fellows for Math for America Los Angeles
  - Project Title: Creating a Calculus Pathway for Inner-City Students

Say  $h(x) = x^3$   
What is  $h(\text{ice})$ ?



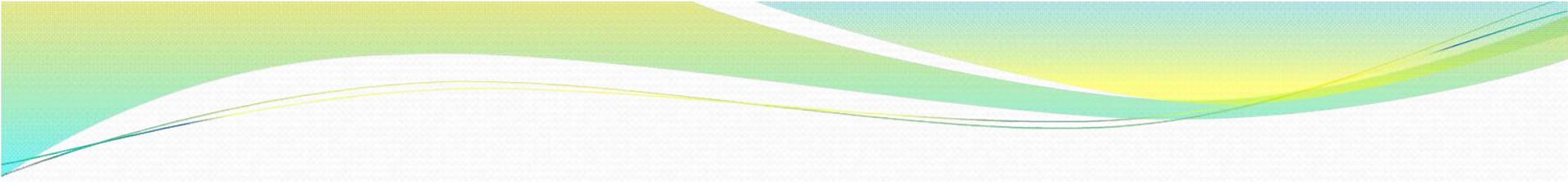


# Why We're Here

- We have a “Pathway to Calculus” project with MfA.
- Designing a 3 year Curriculum with the AP Calculus Exam as one of the end goals.
- This is the second year of implementation in *our* Algebra 2.
- We have received positive feedback from students and fellow educators regarding the curriculum.

SO WE CAME TO SHARE!

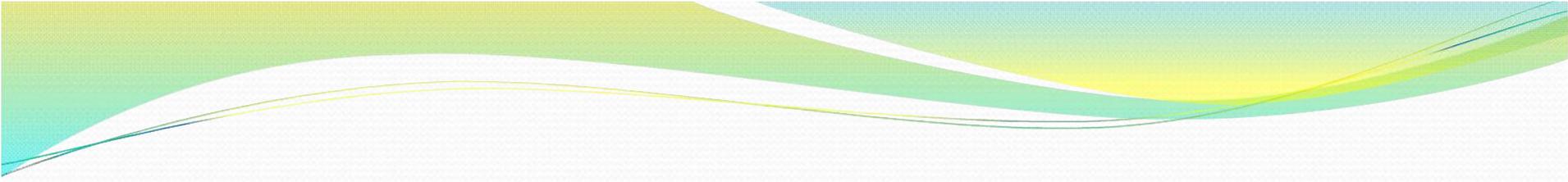
(And we're going to try not to be “those guys.”)



# Let's Talk... Content

- What Math Concepts did the task address?
- What CCSS standards did the task address?
- What Math Practices did the task address?

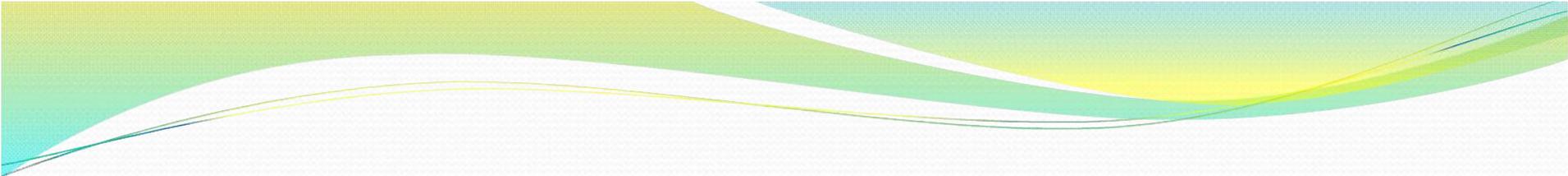
\*The entire Unit 1 will be available on our website. It consists of a variety of tasks leading to this Summative Assessment. You're welcome to use it, but please don't sell it.



# Let's Talk... Curriculum

- Do these tasks have a place in your curriculum?\* Did they have a place in the “CST Era”?
- How/when would you use this in your class?

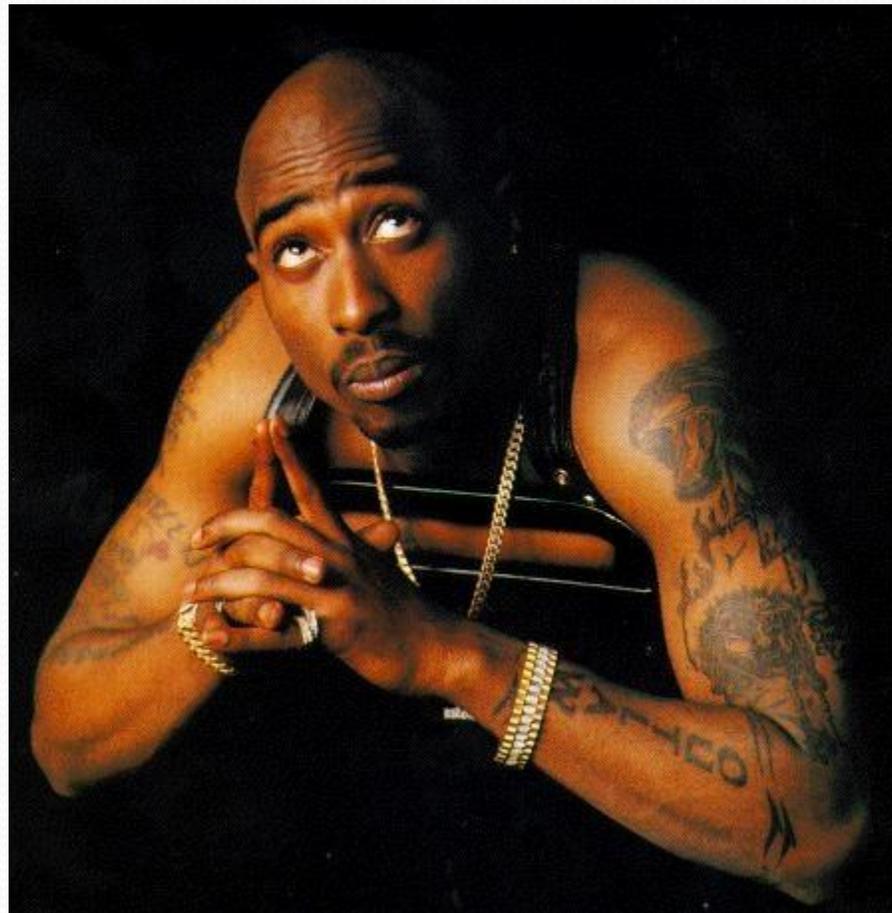
\*If No, this is your chance to walk out. We recommend the Renaissance Lobby bar.



# Let's Talk... Instruction

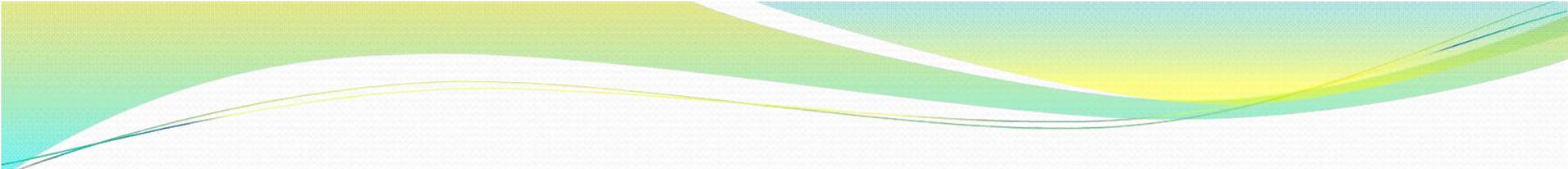
- How should students work on this activity?
  - Individually, in pairs or in groups?
    - How does this lend to the discussion, students' motivation, and overall effectiveness of the lesson?
- How do we assess students?
  - Before: Pre-Assessment (accessing prior knowledge).
  - During: Mathematical discourse and quality of conversation.
  - After: An *Extension* to the task? A different Task perhaps?

Say  $f(x) = 2x$   
What is  $f(\text{pac})$ ?



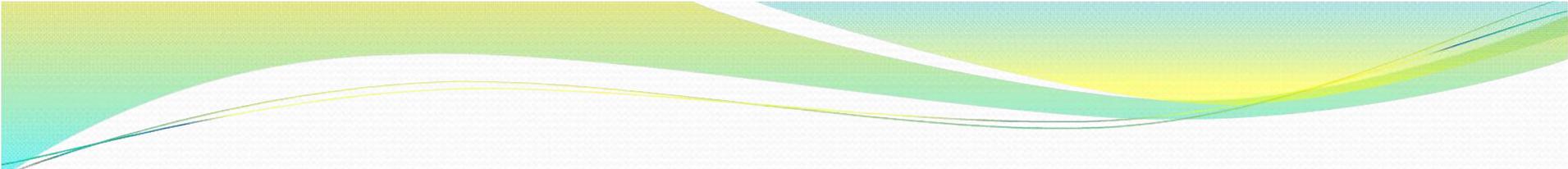
What about  $f(\text{quarter})$ ?





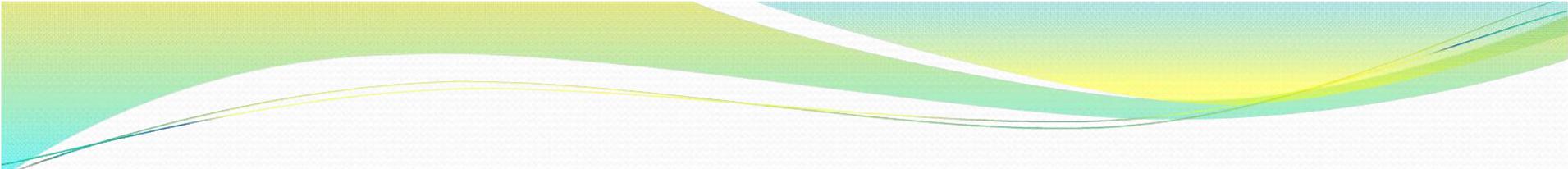
## **What we think about when **CREATING** and **IMPLEMENTING** any task...**

- Content
  - What do we want students to understand?
  - What skills do we want students to develop?
  - What vocabulary should they be able to recognize and/or use?
  - How can we model the math? What does the graph look like?



## What we think about when **CREATING** and **IMPLEMENTING** any task...

- Engagement
  - Providing Relevant Context has been key for us.
  - Exploring the context provides variety, motivation, and entry points.
  - Differentiation with differing levels of questioning, scaffolding, and *Extensions*
  - Establishing Rigor and being “Less Helpful”
  - Avoiding a “Cookbook” line of questioning
  - Focusing on Far and Medium Transfer (We will come back to this!)



## What we think about when **CREATING** and **IMPLEMENTING** tasks...

- Opportunities for Question and Discussion
  - Multiple answers, methods, and entry points.
  - Requiring justification and explanation for their conclusions (MP3).
- Lesson Approach:
  - 1) Launch (picture/video/story)
  - 2) Investigate (work on the task)
  - 3) Debrief (discussing the main ideas of the task)



# Transfer of Learning

- Transfer of Learning is the application of skills, knowledge, and/or attitudes that were learned in one situation to another learning situation (Perkins 1992).
- Transfer of Learning is the application of skills and knowledge learned in one context being applied in another context (Comier & Haggman 1987).



# Near Transfer vs. Far Transfer

- NEAR Transfer: Skills and knowledge are applied in the same context as they were taught.
- FAR Transfer: Skills and knowledge are applied in an entirely different context from the one in which they were taught.
- Our compromise: MEDIUM Transfer



# Medium Transfer (our definition)

- Within the same context but requiring a different type of thinking (i.e. thinking backward).
- In a different context with similar questioning, vocabulary, and procedures.
- In the same context but requiring additional knowledge/skills not directly addressed in the lesson.
- New lines/types of questioning in every task.

Say  $g(x) = e^x$

What is  $g(t)$ ?



What about  $g^{-1}$  ( DeGeneres )?





# Contact Information

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\*all materials can be found at [coast2coast.me](http://coast2coast.me)