

EDUC 263E: Quantitative Reasoning and Mathematics I
Stanford University, Summer 2021
July 27, Aug 3, 10, 17, 24, 31, and Sept 7 | 3-5:50 in CERAS 204

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Course Objectives:

The EDU263E (Quantitative Reasoning and Mathematics I) course is Part 1 of a four-course sequence in elementary mathematics teaching methods. This sequence is designed to provide teacher candidates with a coherent set of experiences for mathematics teaching and learning in elementary schools. Through assigned readings, classroom discussions, content rich mathematics activities, and assignments that require data collection in your field placement, you will be supported as you make sense of how to approach the profession of teaching. Through thinking about ourselves as teachers and examining classroom activity, we will set the stage for our development as elementary mathematics teachers.

Please note: We will adhere to the syllabus as much as possible. However, we are sensitive to the needs of the class, therefore, the syllabus is subject to change.

Course Assignments:

Assignment	Due Date
<i>Mathstory Assignment</i> Write a narrative reflection on your past and present experiences as a math learner and how these experiences shape your identity and beliefs as a teacher.	Tuesday, August 10th
<i>Readings</i> Assigned readings should be done before class.	Before every class
<i>Participation</i> Our whole-class learning is enhanced when everyone reads carefully and fully participates in class activities and discussions.	Every class

Course Grades:

Course grades will be based on attendance and punctuality, completion of pre-work activities, participation in synchronous activities (discussion about the readings, math content activities, etc.), and the quality and completion of the Mathstory written assignment.

Course Readings:

Clements, D. H., & Sarama, J. (2018). Myths of early math. *Education Sciences*, 8(2), 1-8.

Gutiérrez, R. (2009). Framing equity: Helping students “play the game” and “change the game.” *Teaching for Excellence and Equity in Mathematics*, 1(1), 4-8.

Smith, M. S., & Stein, M. K. (2018). *5 practices for orchestrating productive mathematical discussions*. Reston, VA: National Council of Teachers of Mathematics.

TODOS (2020). The mo(ve)ment to prioritize antiracist mathematics: Planning for this and every school year [Position statement]. <https://www.todos-math.org/assets/The%20Movement%20to%20Prioritize%20Antiracist%20Mathematics%20Ed%20by%20TODOS%20June%202020.edited.pdf>

*Van de Walle, J. A., Karp, K. S., & Bay-Williams, J. M. (2010). *Elementary and middle school mathematics: Teaching developmentally* (10th ed.). New York: NY: Pearson.

Note: While Van de Walle is not necessary for Summer, the Van de Walle text will be used throughout the year so if you wish to purchase it, it is available through the Stanford Bookstore, Amazon and other sellers. Copies are also on reserve at Cubberley Library. All readings for summer will be accessible through the Canvas website <https://canvas.stanford.edu>. Assignments will also be submitted through this site.

Students with documented disabilities:

Students who may need an academic accommodation based on the impact of a disability must initiate the request with the Student Disability Resource Center (SDRC) located within the Office of Accessible Education (OAE). SDRC staff will evaluate the request with required documentation, recommend reasonable accommodations, and prepare an *Accommodation Letter* for faculty dated in the current quarter in which the request is being made. Students should contact the SDRC as soon as possible since timely notice is needed to coordinate accommodations. The OAE is located at 563 Salvatierra Walk (phone: 650-723-1066, 650-723-1067 TTY).

At a Glance Summary

Date	Topics and In-Class Activities	Readings	Due
Class 1 July 27	<i>In Class Focus:</i> Exploring problem-based learning through task “How Much is a Billion?” <i>Equity Focus:</i> Locating equity in the classroom: The importance of attending to student thinking and participation		Task: How much water fits in your room?
Class 2 Aug 3	<i>In Class Focus:</i> Dot Talks and Number Talks <i>Equity Focus:</i> When students share their strategies with one another, they develop powerful math identities	TODOS Position Statement	Bring Mathstory draft to class
Class 3 Aug 10	<i>In Class Focus:</i> The relationship between pedagogy, learning mathematics, and math identity <i>Equity Focus:</i> Listening to and reflecting on student thinking puts students at the center of teaching	Gutiérrez	Final Mathstory Assignment
Class 4 Aug 17	<i>In Class Focus:</i> A Vision for Teaching and Learning Mathematics <i>Equity Focus:</i> Honoring a range of student thinking prepares you to teach all students and support positive math identities	CA Math Framework Chpt 2	
Class 5 Aug 24	<i>In Class Focus:</i> CGI + Analyzing Math Tasks	Franke & Kazemi	

	<i>Equity Focus:</i> Good math tasks increase learning opportunities for all students and support positive math identities		
Class 6 Aug 31	<i>In Class Focus:</i> Sorting Student Strategies and Representations <i>Equity Focus:</i> Understanding children’s strategies as part of a developmental process enables a focus on growth	Clements & Sarama	
Class 7 Sept 7	<i>In Class Focus:</i> 5 Practices for Robust Mathematical Discussions <i>Equity Focus:</i> Centering your practice on making sense of student work fosters learning and belonging	5 Practices	