Course Information

EDUC 263A: Curriculum and Instruction in Mathematics (2 units)
Summer 2026
June 29-July 9
3:15 pm - 6 pm
ANKO 107
Link to Canvas

Course Instructors

Primary Instructor: Dr. Jo Boaler (she/her pronouns)
You may call me "Jo" in writing and when we talk.
Email address: joboaler@stanford.edu
Office Hours by appointment (email me to set up a time)

Teaching Assistant: Dionne Aminata (she/her pronouns)
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Course Overview/Goals

This is the first of a 3-course sequence focusing on mathematics teaching and learning. The course provides an opportunity for sustained learning and professional growth. Our goals are to help you:

- understand the nature of effective teaching and learning of mathematics,
- increase your knowledge of mathematics and mathematics pedagogy,
- increase your theoretical knowledge and practical experience in planning, teaching, and assessing mathematics,
- understand the mathematical needs of a diverse range of students,
- understand the complexities of diverse, multiple-ability classrooms while broadening your repertoire of teaching techniques, and
- learn from your experiences in schools through informed reflection.

Throughout the three-course sequence, we will consider the Common Core State Standards for Mathematics.

In the first quarter we will analyze teaching practices in many ways, considering the role played by mathematics, the teacher, and the students. Several different examples of practice will be analyzed on video. We will also engage in mathematical tasks that will place you as learners of mathematics and pedagogy. We will consider the acts of close and respectful listening to students' mathematical thinking and asking important questions in order to probe and further understanding. There will be a joint focus throughout the course on research and practice.

Course Materials

Technology: All course details and materials will be posted on our Canvas course site. You will need to have access to a device that connects to the internet so that you can access email and Canvas. Students should bring their STEP-provided iPad or another device to each class session.

Readings: All course readings will be posted electronically to Canvas at the beginning of the quarter so students have the choice to print them free of charge in CERAS, if desired.

Coursework and Grading

This summer course is quickly-paced by design, with each day representing a "week" in a traditional quarter. We expect you to come to class having completed the reading and assignments due for that day and to be prepared to participate in class discussions and activities. This means that you have a clear idea of the main points; you may have formulated some questions; and/or you have noted any related issues that the reading or topic raised for you. We will ask you to respond to articles, and engage with your peers, in the discussion section of Canvas.

Regarding participation, we are looking for you to contribute to small and whole group discussions in class, and online discussions. Whether you are more talkative or more introverted in nature, we expect that you make concerted efforts to both listen and contribute, monitoring your level of sharing, and making space for others to join in. We recognize that you may have more to say about one topic over another, but across the 8 classes, we should have heard your thoughts and ideas in both small and whole group discussions and online. This will help your learning as well as the learning of the group.

Your participation depends upon your timeliness in attendance. If for any reason, you will miss or be late to class, **you need to email the instructors ahead of time**.

In the summer quarter, you will be required to complete several assignments (see Assignment details on Canvas), conduct readings (see Course Schedule) and complete daily tasks, which will be described during class. Our expectation is that everyone will receive an A grade. If your work – including the quality of your participation and major assignments – is not at that standard we will discuss ways to improve it.

Major Assignments

What:	When:	Where:	Details:
Maths History: An Informal Essay	Sunday, June 28th by noon	Upload to Canvas	At least 500 words
Number Talk Reflection	Thursday, July 9th by 10pm	Upload to Canvas	1 page + observation
Summer Mathematics Reflection	Sunday, July 12th by 10pm	Upload to Canvas	1000-1500 words

Course Schedule & Readings

Date	Readings for Class
1. 6/29	Session 1: Mathematical Mindsets
	Boaler, J. (2015). Mathematical Mindsets: Unleashing students' potential through creative mathematics, inspiring messages and innovative teaching. Josey-Bass A Wiley Brand. (Read Chapter 3 pp. 25-37)
2.6/30	Session 2: Number Talks and Planning
	Hogan, J. (2017). Demystifying math: What is number sense? https://www.scholastic.com/parents/school-success/learning-toolkit-blog/demystifying-math-what-number-sense.html
3.7/01	Session 3: What *is* Mathematics?
	Smith, M. S., & Stein, M. K. (2018). *5 practices for orchestrating productive mathematics discussions* (2nd ed.). National Council of Teachers of Mathematics. (Intro and Chapter 1)
4.7/02	Session 4: Intro to Algebra
	Boaler, J. (2002). *Experiencing school mathematics: Traditional and reform approaches to teaching and their impact on student learning.* (Revised and Expanded Edition ed.). Mahwah, NJ: Lawrence Erlbaum Association. (Chapters 4 and 5)
5. 7/06	Session 5: Classroom Norms
	Ladson-Billings, G. (2009). The dreamkeepers: successful teachers of African American children. John Wiley & Sons. (Chapter 2)
6. 7/07	Session 6: Teacher Moves
	Cabana, C; Shreve, B, & Woodbury, E. (2014). Working towards an Equity Pedagogy. In Nasir, et al (2014). Mathematics For Equity. Teachers College Press. (pp. 35-52)
7/08	Session 7: Seeking Out Brilliance
	Joseph, N. M., Hailu, M., & Boston, D. (2017). Black women's and girls' persistence in the P–20 mathematics pipeline: Two decades of children, youth, and adult education research. Review of Research in Education, 41(1), (pp. 203-221)
7/09	Session 8: Leveraging Student Identities
	Kebreab, L., Bush, S. B., & Jackson, C. (2021). Leveraging Student Identities to Develop Pedagogical Fluency. *Mathematics Teacher: Learning and Teaching PK-12*, *114*(12), 948-955. Retrieved Jun 1, 2026, from https://doi.org/10.5951/MTLT.2020.0355

Course Policies

Submitting to Canvas

All assignments should be digitally submitted to Canvas as a single file, unless otherwise specified by the instructors. You may choose to submit a word document or a link to a shared google document. Be sure to change the permissions to "anyone in Stanford University with the link can comment" on google docs before submission in order to avoid a late penalty. All feedback will be provided digitally within your submitted documents in Canvas.

> Please save all files using the following naming convention:
> Lastname_Assignment
> For example: Lane_Maths History

Deadlines and Late Submissions

Assignment deadlines are listed in the course schedule, along with estimated times of completion, to enable you to effectively plan and balance your academic work and other commitments. Despite the best planning, however, we know that life happens! So:

- Please contact us in advance if you have any concerns about completing major assignments on time. Extensions may be granted by your instructors, if requested.
- Late work that is submitted without an extension may be subject to a grade penalty.
- As with all of your work in C&I this year, you may revise and resubmit any written assignment for a higher grade.
- Do your best to complete readings such that you can be an active participant in the next class session! If the reading is longer or more academic in nature, find the most salient parts or pieces that stand out to you.

The Honor Code

All Stanford students are expected to follow the Stanford Honor Code and Fundamental Standard, as noted in the STEP Handbook and Stanford Student Guide. Please review Stanford's Honor Code, these recommendations from the Office of Community Standards, and documentation and citation resources from the Hume Center for Writing and Speaking.

Academic Accommodations

Stanford is committed to providing equal educational opportunities for disabled students. Disabled students are a valued and essential part of the Stanford community. We welcome you to our class.

If you experience disability, please register with the Office of Accessible Education (OAE). Professional staff will evaluate your needs, support appropriate and reasonable accommodations, and prepare an Academic Accommodation Letter for faculty. To get started, or to re-initiate services, please visit oae.stanford.edu.

If you already have an Academic Accommodation Letter, we invite you to share your letter with us. Academic Accommodation Letters should be shared at the earliest possible opportunity so we may partner with you and OAE to identify any barriers to access and inclusion that might be encountered in your experience of this course.

Learning Resources

Your peers and instructors are valuable sources of learning, and we hope you will make the most of our time together! In addition, Stanford has a wealth of resources for graduate students, from group study halls to well-being coaches to professional development offerings. Which of the resources below will you explore?

- Writing tutors from the Hume Center for Writing and Speaking, to get additional feedback on your teaching portfolio materials
- English as a Second Language (ESL) courses for international graduate students
- Pedagogy workshops and programs from the Center for Teaching and Learning (CTL), to continue your teaching development
- IDEAL Pedagogy self-paced course, learning community, and/or syllabus consultation from CTL, to continue developing inclusive pedagogy practices
- Peer Academic Coaching from CTL, to help with time management and other work strategies
- Study Halls from CTL, to work in quiet companionship with other students
- Grad Grow from the Office of the Vice Provost for Graduate Education, to develop key professional competencies, including in teaching and mentorship
- Well-being coaches from Vaden, to receive holistic support and guidance