

CI 176: Mathematics Instruction and Applied Assessment Fall 2024	
Cohort: Fresno Course ID number: 74986	Instructor: Dr. Rosa Chávez (she/her/ella) Email: rosachavez@csufresno.edu Telephone: (559) 825-1371 Contact me via email or Canvas inbox. Most messages will be responded to within 24-48 hours. Messages sent after 5pm on Friday may not be replied to until Monday. If you do not receive a response in a timely manner, assume I did not receive your message (possibly due to a technology glitch or just a missed message by your instructor) and make contact again.
Units: 3 Class Meeting Location & Time: Fresno Campus, ED 169 Thursdays 8:00-11:00AM	Fresno Teacher Residency Program Co-Instructor: Shannon Reid Email: shannon.reid@fresnounified.org
Canvas: fresnostate.instructure.com	Office: ED 233
Course Modality: This course is scheduled for in-person instruction, and we will be meeting at Washington Elementary School. One session—Nov 7 th will be asynchronous. Course materials, activities and assignments will be provided on Canvas.	Student Support Hours: In-person before or after class on Thursdays or virtual by appointment. Email me to schedule an in-person or Zoom meeting.

Land Acknowledgement:

The Fresno State campus sits in the midst of the San Joaquin Valley, a valley rich in the traditions and representation of Native American peoples and cultures. We are grateful to be in the traditional homelands of the Yokuts and Mono peoples, whose diverse tribal communities share stewardship over this land. To recognize the land is an expression of gratitude and appreciation to those whose territory we reside on, and a way of honoring the Native people who have been living and working on the land from time immemorial. It is important to understand the long-standing history that has brought us to reside on the land, and to seek to understand your place within that history. Land acknowledgements do not exist in a past tense, or historical

context: colonialism is a current ongoing process, and we need to build our mindfulness of our present participation.

[Native Land Digital Map Lookup](#)
[Know The Land Territories Campaign](#)

Course Description:

This course is designed to prepare teacher candidates to plan instruction based on the assessment of students' mathematical understanding and to teach mathematics using multiple strategies and methods in culturally and linguistically diverse elementary classrooms.

Multiple Subject Program Requirements:

This course is a required course in Phase 2 of the Multiple Subject Program. Taken concurrently, Field Study B is designed to provide the necessary classroom access essential for completing the assignments in this course. Teacher candidates not enrolled in Field Study B will need to make special arrangements with the instructor.

It is usually expected that students will spend approximately 2 hours of study time outside of class for every one hour in class. Since this is a 3-unit class, you should expect to spend an average of 6 hours outside of class each week reviewing course material, completing reading homework, completing small tasks, and working on major assignments.

Prerequisites for the course: Successful completion of Phase 1 of the Multiple Subject Credential Program.

Required Course Materials

1. Van de Walle, J. A., Karp, K. S., & Bay-Williams, J. M. (2020). *Elementary and middle school mathematics: Teaching Developmentally* (10th Edition). Pearson.
2. Mathematics Manipulatives (Base 10 Blocks and Unifix Cubes). Materials will be provided with support from the Mathematics and Science Teacher Initiative (MSTI) at Fresno State.

Recommended Course Materials

1. A Fresh Look at Formative Assessment in Mathematics Teaching.
2. Engaging in Culturally Relevant Math Tasks: Fostering Hope in the Elementary Classroom.
3. Children's Mathematics: Cognitively Guided Instruction.
4. Teaching Math to Multilingual Students.
5. Early Elementary Mathematics Lessons to Explore, Understand and Respond to Social Injustice
6. Upper Elementary Mathematics Lessons to Explore, Understand and Respond to Social Injustice.

Additional readings will be accessible through Canvas course site.

Course Details

Course goals: This course is designed to examine both teacher candidates' and students' conceptions of mathematics, explore instructional strategies and assessments to develop a linguistically responsive and culturally relevant problem-based view of mathematics, and encourage critical and justice-centered thinking.

Learning Outcomes:

The learning outcomes are aligned with the 2016 Teaching Performance Expectations (TPE), and the KSOEHD Dispositions: Reflection, Critical Thinking, Professional Ethics, Valuing Diversity, Collaboration, Life-Long Learning.

CURRICULUM, PLANNING, & INSTRUCTIONAL STRATEGIES

The teacher candidate will:

- Demonstrate an understanding of the current national and state mathematics content standards and applicable English Language Development Standards and their responsibility for student academic learning outcomes related to the standards. (TPE 1.6 P, 3.1 IPA)
- Apply knowledge of students' backgrounds, interests, and needs to plan mathematics instruction that provides access to all students. (TPE 1.1 P, 1.4 P, 3.2 IPA, 3.5 P, 4.1 P, 4.4 P)
- Identify characteristics of a secure environment that encourage intellectual risks, and foster students' positive attitudes, curiosity, flexibility, communication, and persistence in mathematics. (TPE 1.5 IPA, 1.6 P, 2.2 P, 2.5 P, 2.6 P, 4.4 P)
- Use and adapt instructional materials for mathematics, including software and other technology resources, which develop students' adaptive reasoning, strategic competence, conceptual understanding, procedural fluency, and productive disposition. (TPE 1.5 IP, 3.5 P, 3.6 IP, 4.6 P)
- Demonstrate the ability to organize instruction to make mathematics concepts concrete and meaningful by (a) engaging students in exploration of real-world problems and multiple representations, (b) encouraging discussions of multiple approaches to math problems, (c) requiring students to construct logical arguments based on evidence, and (d) providing clear explanations and appropriate academic language. (TPE 1.3 IPA, 3.3 IPA, 3.5 P, 4.7 IP)

ASSESSMENT

The teacher candidate will:

- Identify, evaluate, adapt, and apply methods to assess children's understanding in mathematics, including assessment strategies such as observation, questioning, student work, scoring guides, written tests, student journals, self-assessment, and portfolios. (TPE 4.3 P, 5.1 IP, 5.4 I)
- Interpret evidence gathered using assessment strategies and use it to pace mathematics instruction and address students' misconceptions. (TPE 1.8 IP, 5.2 P)
- Examine different assessment methods and identify the purpose for which each method is most effective. (TPE 5.1 I)

PROFESSIONAL EDUCATOR

The teacher candidate will:

- Consider personal biases and how they affect teaching and learning mathematics. (TPE 2.5 IP, 6.2 IP; Valuing Diversity)
- Examine his or her own pedagogical practices related to mathematics instruction and reflect on the importance of planning and implementing mathematics instruction to improve student learning. (TPE 6.1 IPA, 6.3 IP; Reflection)

- Analyze, discuss, and evaluate professional resources, including research studies related to mathematics education as tools to improve mathematics instruction. (TPE 6.3 IP, Critical Thinking; Life-long Learning)

Course Assignments (Refer to “Assignments” on Canvas)

Detailed directions and materials for the course assignments will be provided on Canvas. The course is organized by weekly class session modules with detailed information and resources provided for each week. These modules will be available the day before our weekly class session. Below the weekly modules, directions and materials for the major course assignments will be provided. The assignment modules will be available at least a few days before the assignment is introduced in class. Check the Canvas course at least 2 to 3 times per week to prepare for class sessions, get assignments (including weekly readings), and submit completed work.

Attendance & Participation (10 points)

Attendance is an essential part of this collaborative learning course. Points will be earned for attendance/ participation: active participation is required. Participation points will be based on: (a) contributions to knowledge of content, instruction, and assessment; (b) connections between content areas and to the classroom; (c) willingness to ask questions, comment; (d) efforts to include all class members; (e) awareness of differing opinions; (f) sensitivity to people’s beliefs and feelings; (g) positive attitude; (h) professionalism.

Math Story (20 Points) TPE 6.1, 6.2, 6.7

This assignment is to write a ‘math life story’ to reflect on your own past and present experiences as a mathematics learner, and reflect on how those experiences impact your identity, attitudes, and beliefs towards mathematics as well as your understanding of mathematics. You will also reflect on how your own experiences may impact you work as a teacher.

Justice Centered Unit Plan (50 Points Total)

You will choose a grade band and instructional unit that you will plan for with a group based on 1-2 justice-centered children’s books and identify the big ideas and guiding questions that will drive the unit. Groups will then design three core tasks connected to the context around which the big ideas will be constructed. You will individually submit a lesson plan and the full unit as a group. You will submit an individual reflection after lesson implementation. Each component of the unit is outlined below.

Book Selection (5 points) TPE 1.3, 1.5 4.3, 7.1, 7.3, 7.7, 7.9

Teacher candidates will select one to two justice-centered children’s book(s) that they will utilize throughout the remainder of the unit plan assignment. Groups will select the book attending to big ideas and guiding questions driving the unit.

Full Lesson Plan (10 points) TPE 2.2, 2.5, 2.6, 7.1, 7.3, 7.4, 7.7, 7.9, 7.10, 7.11

Teacher candidates will design a full lesson plan aligned to their group’s unit. Your lesson plan should include a high-quality mathematical task, a clearly matched learning goal, an intentional launch, anticipated student struggles and responses, and a formative assessment component.

Math Task (10 points) TPE 1.1, 3.4, 3.5, 4.3, 4.7, 7.3, 7.4, 7.9

Teacher candidates will identify and create a multidimensional group-worthy task aligned to the broader unit. Your task should have multiple entry points (e.g., low-floor high-ceiling), attend to language practices, and be mathematically rich in nature.

Formative Assessment (10 points) TPE 3.2, 3.4, 4.6, 5.1, 5.2, 5.7, 7.6, 7.7, 7.10

Teacher candidates will design a formative assessment that aligns with their lesson, mathematical task, and learning goal(s) of the unit. You will be asked to bring in examples of student work to analyze and reflect on necessary adjustments to instruction for future implementation.

Lesson Implementation (15 points) TPE 1.3, 1.5, 3.1, 3.2, 3.3, 4.7, 7.1, 7.3, 7.6, 7.7, 7.11

Teacher candidates will implement their lesson (task and assessment) in their placement classrooms. Lesson should be implemented with a small group or small subset of students.

Reflection Final Paper (20 points) TPE 6.1, 6.2, 6.7

Teacher candidates will write a reflection paper reflecting on every aspect of the unit-plan. You will submit the lesson as a final paper but are encouraged to reflect on each assignment throughout the semester.

Grading Policy

All written and oral assignments must reflect high standards. As a future teacher, you must be able to model communication skills for your students.

Assignment	Points
Math Story	20 points
Justice Centered Unit Plan	
Book Selection	5 points
Full Lesson Plan	10 points
Math Task	10 points
Formative Assessment	10 points
Lesson Implementation	15 points
Reflection Final Paper	20 points
Attendance and Participation	10 points
TOTAL	100 points

Letter grades are assigned on the standard scale based upon a possible total of 100 points.

A	90-100	B	80-89	C	70-79	D	60-69	F	0-59
----------	--------	----------	-------	----------	-------	----------	-------	----------	------

Course Calendar

The course schedule is subject to change in the event of extenuating circumstances.

Tentative Course Schedule

Week/ Date	Topic & In-Class Focus	Readings (TBD - see Canvas)	Assignments (Due Dates)
1 Aug 22	Content & Pedagogy Focus: Knowing & Doing Mathematics Equity Focus: Cultivating Positive Mathematical Identities	TODOS Position Statement	
2 Aug 29	Content Focus: Mathematical Standards Pedagogy Focus: Vision for Teaching & Learning Mathematics Equity Focus: Noticing for Equity	VDW Ch. 1 & 2 CGI Chapter 1	
3 Sept 5	Content Focus: Number Sense Pedagogy Focus: Dot Talks and Number Talks Equity Focus: Honoring Range of Student Thinking	VDW Ch. 7	Math Story Sun, Sept 1
4 Sept 12	Content Focus: Mathematical Problem Solving Pedagogy Focus: Problem-Based Learning Equity Focus: Supporting Literacy Practices in Mathematics	VDW Ch. 3 Integrating Literacy, Math, and Science to Make Learning Come Alive	
5 Sept 19	Content Focus: Place Value and Whole Number Operations Pedagogy Focus: Analyzing Mathematical Tasks Equity Focus: Introduction to Social Justice Mathematics	VDW Ch. 10 Abolition Science Podcast – Social Justice Mathematics and Teacher Activism What is Social Justice and Why Does it Matter in Teaching Mathematics?	Book Selection Sun, Sept 22
6 Sept 26	Content Focus: Addition & Subtraction Pedagogy Focus: Facilitating Collaboration through Group-worthy Tasks	VDW Ch. 11 Imagining Culturally Relevant Teaching	

	Equity Focus: Culturally Relevant Mathematical Tasks	Through Mathematics Practices and Tasks Making culturally responsive mathematics teaching explicit: a lesson analysis tool	
7 Oct 3	Content Focus: Multiplication & Division Pedagogy Focus: Facilitating Collaboration through Group-worthy Tasks Equity Focus: Culturally Relevant Mathematical Tasks	VDW Ch. 12 Creating and Assessing Culturally Relevant Mathematics Tasks	Math Task Fri, Oct 4
8 Oct 10	Content Focus: Measurement Pedagogy Focus: Lesson Architecture & Design Equity Focus: Serving Linguistically Diverse Students	VDW Ch. 4 VDW Ch. 18 Codeswitching and Mathematics Learners	
9 Oct 17	Content Focus: Geometry Pedagogy Focus: Assessments for Learning Mathematics Equity Focus: Navigating Accountability & High Stakes Testing	Option: VDW Ch. 19 or VDW Ch. 5 Using Classroom Discourse as a Tool for Formative Assessment Meir or Gutierrez reading on testing - in class jigsaw?	Formative Assessment Sun, Oct 13
10 Oct 24	Content Focus: Fractions, Decimals & Percents Pedagogy Focus: Student Strategies and Representations Equity Focus: Social Justice for Early Elementary Mathematics	Option: VDW Ch. 15 or VDW Ch. 16 Family Counts! Mathematics, Family, and the Diversity Across Our Homes	
11 Oct 31	Content Focus: Algebraic Thinking Pedagogy Focus: Lesson Plan Rehearsals & Feedback	VDW Ch. 13 “Tu Lucha es Mi Lucha”: Mathematics for Movement Building	Lesson Plan Sun, Oct 27

	Equity Focus: Social Justice for Upper Elementary Mathematics		
12 Nov 7	<u>Asynchronous Session</u> Content & Pedagogy Focus: Lesson Plan Rehearsals & Feedback Equity Focus: Social Justice for Middle School Mathematics	Hey Google, Who's a Mathematician?	Lesson Implementation Window
13 Nov 14	Content Focus: Ratios & Proportions Pedagogy Focus: Attending to Student Authority Equity Focus: Status, Competence & Power in Mathematics	VDW Ch. 17 Discourse Actions to Promote Student Access or Cultivating Mathematical Hearts Ch. 5 – Power and Participation	Lesson Implementation Window
14 Nov 21	Content Focus: Probability Pedagogy Focus: Analyzing Student Work Equity Focus: Healing & Trauma in Mathematics	VDW Ch. 21	Student Work In class
15 Nov 28	Holiday Week – No Classes		
16 Dec 5	Content Focus: Data Science & AI Pedagogy Focus: Revising Lesson Plans Equity Focus: Creative Insubordination	VDW Ch. 20 Strategies for Creative Insubordination in Mathematics Teaching	
17 Dec 12	No Classes – Last Day of Instruction is Dec 11		Final Reflection Fri, Dec 13

Final Exam for this Course: There is no final exam for this course. You will submit a final reflection paper the final week of the semester.

Course Policies & Safety Issues

Class Attendance and Participation: Class sessions will provide an opportunity for you to engage in learning connected to course readings and assignments. Teacher candidates are expected to: engage in whole class and small group activities and discussions; be sensitive to people's beliefs and feelings; maintain a positive attitude; and conduct his/her actions in a respectful, professional manner. If we need to meet on Zoom for synchronous class sessions, find a place to work where you will be able to focus on the class so you can be mentally engaged in learning and participating in class.

Absences: If you will be absent from a class session, notify the instructor via email. It is your responsibility to check information provided on Canvas about the class, get notes from classmates, and contact the instructor if you need additional assistance. In the case of authorized absences due to university-sponsored activities, students should expect to submit their work to the instructor on or before the due date, or as arranged with the instructor.

If you are absent from multiple class sessions, your final grade in this course may be negatively impacted. When a student is absent for an extended time period, a viable make-up plan may not be feasible. In these circumstances, other options such as dropping the class for a serious and compelling reason or withdrawal from the university may be appropriate. Please see [APM 232: Policy on Student Absences](#).

Collaborative Work: There will be many opportunities to work collaboratively with your classmates during class sessions, on homework/asynchronous activities, and for specific assignments. When participating in group work, teacher candidates are expected to come prepared to work with their group, include all group members, share the responsibilities for completing tasks, be aware of differing opinions and ideas, treat others respectfully, and compromise as needed. If you have members in your group who are not contributing to the work or learning, please speak with the instructor.

Technology Use: It will be helpful to have your computer and/or tablet available for some activities and/or materials during class sessions. You can have electronic course materials needed for class on your computer/tablet, but close or minimize other tabs/apps so they are not distracting you and your classmates during class time. Out of respect for everyone's learning experience, electronics should NOT be used during class time for completing assignments for this class or other courses, emailing, shopping, texting, gaming, and/or social media. Turn your cell phone to silent or vibrate mode during class, and quietly step out of the room if you need to address a personal issue.

Audio and Video Recording: Audio and video recordings of class lectures are prohibited unless I give you explicit permission to do it. Students with an official letter from the Services for Students with Disabilities office may record the class if SSD has approved that service.

Confidentiality: The privacy and identity of children and their families should be protected in all written materials. Please use a pseudonym or initials instead of the child's name. For example, write "for the purpose of this study, I will refer to the observed student as *Child A*."

Revising assignments: You may revise and resubmit course assignments to improve your overall grade in the course. If you want to earn an A in the course, you should revise any of the major course assignments (especially the Mathematics Formative Assessments, Student Interview, and Mathematics Instruction) with a score less than 80%. If you want to earn a B in the course, you should revise and resubmit major course assignments with a score less than 70%. If you are on the borderline between two letter grades at the end of the semester, your grades on the major assignments will be taken into consideration for your final grade.

The revised assignments should be submitted within 2 weeks after receiving your graded assignment. All revised work must be submitted by the last day of instruction for the semester. *The final exam cannot be revised.*

Late assignments: Assignments are due by the end of the day on the date listed in the syllabus. If you cannot turn in an assignment by the due date, you may request an extension by emailing the instructor. Late assignments without prior instructor notification/approval can earn up 90% of the full score (calculated by taking 90% of the grade if the paper had been submitted on time). All late work must be submitted by the last day of instruction for the semester.

Plagiarism Detection: The campus subscribes to Turnitin, a plagiarism prevention service, through Canvas. You will need to submit written assignments to Turnitin. Student work will be used for plagiarism detection and for no other purpose. The student may indicate in writing to the instructor that they refuse to participate in the plagiarism detection process, in which case the instructor can use other electronic means to verify the originality of their work. Turnitin Originality Reports will be available for your viewing.

Intellectual Property: All course materials, including but not limited to the syllabus, readings, quiz questions, exam questions, and assignments prepared by the instructor are property of the instructor and University. Students are prohibited from posting course materials online (e.g., Course Hero) and from selling course materials to or being paid for providing materials to any person or commercial firm without the express written permission of the professor teaching this course. Doing so will constitute both an academic integrity violation and a copyright violation. Audio and video recordings of class lectures as well as images of chat or messages shared during course sessions are prohibited unless I give you explicit permission in advance. Students with an official letter from the Services for Students with Disabilities office may record the class if SSD has approved that service. Otherwise, recordings of lectures are included in the intellectual property notice described above. These provisions exist regardless of the modality of the course. That is, they apply to in-person, hybrid, and online courses.

Dispute Resolution: If there are questions or concerns that you have about this course that you and I are not able to resolve, please feel free to contact the chair of the department to discuss the matter:

Patricia López, Ph.D.
Department of Curriculum and Instruction
pdlopez@csufresno.edu,
559.278.0115

COVID-19 Information: The following sections regarding COVID are subject to change given changing circumstances on-campus and in the community. Please check the [COVID website](#) for the most up-to-date information.

Vaccination: The California State University system strongly recommends the COVID-19 vaccination and booster for all students, faculty, and staff. As a reminder, you are eligible for a booster five (5) months after receiving a final dose of the Pfizer or Moderna vaccine; or two (2) months after receiving a Johnson & Johnson vaccine.

Face Coverings: Fresno State no longer requires masks to be worn indoors, but based on updated guidance from public health experts, the University highly recommends that all students, faculty, and staff, regardless of vaccination status, wear a surgical grade or KN95 mask indoors. Faculty will continue to have the discretion to require face coverings for their in-person classes as they evaluate the health and safety needs of their individual classroom environments.

Testing: The campus was fortunate to receive the Higher Education Emergency Relief (HEERF) Funds during the pandemic and through June 2023 but funds are no longer available. Students will still be able to obtain free kits from the Student Health and Counseling Center. Additionally, free [COVID-19 test](#) options are offered by the Fresno County Department of Public Health.

University Policies and Services

Students with Disabilities: Upon identifying themselves to the instructor and the university, students with disabilities will receive reasonable accommodation for learning and evaluation. For more information, contact Services to Students with Disabilities in the Henry Madden Library, Room 1202 (278-2811).

Financial Aid Satisfactory Academic Progress Standards and Appeals Process:

<https://studentaffairs.fresnostate.edu/financialaid/policies/sap/index.html>

Fresno State is committed to fostering a safe, productive learning environment for all students. Title IX and CSU policy prohibit discrimination on the basis of sex, which includes sexual harassment, domestic and dating violence, sexual assault, sexual exploitation, and stalking. We understand that sexual violence can impact a student's ability to be successful in the learning environment. We encourage students who have experienced sexual misconduct to seek information on where to report from any member of our faculty or staff in order to ensure that the university can provide students with the necessary resources and supportive measures.

As an instructor, I have a mandatory reporting responsibility as a part of my role. It is my goal that you feel comfortable sharing information related to your life experiences in classroom discussions, in your written work, and in our one-on-one meetings. I will seek to keep the information you share private to the extent possible. However, I am required to report any information I receive regarding sexual misconduct or information about a crime that may have occurred during your time at Fresno State.

Students can report incidents of alleged sexual misconduct to either or both of the following resources:

Office of Compliance and Civil Rights | occr.fresnostate.edu | 559.278.5003

Fresno State Police Department | fresnostate.edu/police | 559.278.8400

Students can also report other incidents of discrimination or harassment to:

Office of Compliance and Civil Rights | occr.fresnostate.edu | 559.278.5003

Students can access *confidential support* from two separate resources on campus:

Counseling Services | studentaffairs.fresnostate.edu/health/counseling | 559.278.2734 Survivor

Advocacy Services | fresnostate.edu/survivoradvocate | 559.278.6796

Pregnancy or Related Conditions:

[Pregnant Students](#) or those with related conditions should contact the Title IX Coordinator in the Office of Compliance and Civil Rights for assistance. The Title IX Coordinator can coordinate specific actions to prevent sex discrimination and ensure the student's equal access to educational programs or activities.

Office of Compliance and Civil Rights | occr.fresnostate.edu | 559.278.5003

[Parent scholars](#) provides information on priority registration and other support for parenting students.

[Services for Students with Disabilities](#) can also provide assistance with [accommodations](#).

If you have concerns and you are unsure who to contact, please visit the [Concern & Action Guide](#).

Emergency Information: In the event of an emergency, everyone in the campus community becomes a partner in the response. To ensure you are prepared and remain calm you must make yourself familiar with campus protocols. To contact the Fresno State Police Department call 559.278.8400 from your cell phone or 911 from a campus phone. Prior to an emergency, assess your environment for options depending on the emergency. Identify all possible exit routes, in an emergency always use the closest most safe exit. Once you exit the building go to the predetermined evacuation assembly point, if that is unavailable then go to an open safe space away from the emergency. Identify where and how you can secure yourself inside if you need to shelter in place or hide from a threat. Be prepared to help guide those around you and assist individuals who may be in need. Additional information can be found at www.fresnostate.edu/emergency

University Policies:

- [Adding and Dropping Classes](#)
- [Cheating and Plagiarism](#)
- [Computers](#)
- [Copyright Policy](#)
- [Disruptive Classroom Behavior](#)
- [Honor Code](#)
- [Title IX](#)

University Services:

- [Associated Students, Inc.](#)
- [Students with Disabilities](#)
- [Dream Success Center](#)
- [Library](#)
- [Learning Center Information](#)
- [Student Health and Counseling Center](#)
- [Academic Success Coaching](#)
- [Survivor Advocacy](#)
- [Writing Center](#)